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OG Real Estate Site

2 Phase I Environmental Site Assessment

2.1 Site Location, Description, and Environmental Setting

The OG Real Estate site is located in the Hudson-Mohawk Lowland physiographic province. The topography of this province has been produced primarily by erosion along outcrop belts of sedimentary rocks that lie between the Catskills and the metamorphosed shale hills of the Taconics. The province generally has low relief and elevation and is underlain by Ordovician shales that have been exposed by the erosion of Silurian and Devonian limestones (University of the State of New York 1966). Site photos are found in Appendix A.

The approximately 94-acre OG Real Estate site consists of two parcels that are owned by Niagara Mohawk Power Corporation and OG Real Estate Developers. The site is vacant and is located in an industrial area on the west side of the Hudson River (see Figure 2-1). The site is generally characterized by little topographic elevation difference, extensive river frontage, and the presence of an abandoned rail line. The site is vegetated by forbs and includes tree stands throughout. Forested areas occur along the river and within the western one-third of the site.

River Road and Old River Road parallel the western edge of the site, but site access is limited as the site is separated from local roads by railroad tracks and parcels that parallel the roads. A small area in the southwest corner of the site is adjacent to River Road. Within 1 mile to the west is a mix of commercial and residential land uses and Interstate Route 87. An unpaved, overgrown access road traverses the eastern side of the site, with a small spur off of this road extending to the northeast corner. To the south of the site is a gas-powered electrical generation plant owned by PSEG Power, LLC.

In the central portion of the site an abandoned railroad right-of-way (ROW) extends from the northern border of the site, where it crosses Normans Kill, to the southern border of the site. Niagara Mohawk overhead transmission lines and subsurface gas pipeline and the Dominion gas pipeline ROW run through a portion of the site.

Bedrock outcrops in the southwestern portion of the site and forms a ridge that extends northward, adjacent to an active rail line that extends parallel to the site's western border. Key site features are presented on Figure 2-1.

2.2 Historical Use Information

The site is reportedly the former ash dumping site of the former Niagara Mohawk coal-fired power plant that is adjacent to the southern side of the site. Normans Kill was re-routed past a marina to the north in 1952, leaving a ditch behind and an island between the ditch and the old shoreline (see Figure 2-1 for the former path of Normans Kill). Niagara Mohawk filled in this ditch with ash from 1952 till 1970, joining the island with the mainland. Coal fragments at the surface can be found throughout much of the site.

2.3 Summary of Previous Studies

Various site investigations have been performed. In 1979 Recra Research, Inc. and Wehran Engineering, P.C. conducted a hydrogeologic investigation, including a water quality assessment for Niagara Mohawk Power Corporation. In 1982, Empire Soils Investigations, Inc. performed a preliminary geotechnical engineering evaluation of the proposed on-site ash disposal area for the Albany Steam Generating Station for Niagara Mohawk. In the mid-1990s, Law Engineering and Environmental Services performed an additional site investigation. These reports describe a late-1997 groundwater quality assessment and a late-1991 wetland delineation. The Law report presents groundwater elevation information, hydraulic conductivity results, and maps of the extent of the bottom ash/fly ash. They report the tidal fluctuation of the Hudson River at 3.37 feet with a fluctuation of up to 2.38 feet in nearby groundwater monitoring wells. They also report that the studies conducted between 1979 and 1988 show that the quality of the groundwater is generally good and that New York State Groundwater Quality Standards are generally only exceeded for iron and manganese. Soil analyses reported by Law indicates that there are localized variations in metals concentrations and that at one location the New York State guidance value for benzene and toluene was exceeded.

Several groundwater monitoring wells installed during the abovementioned investigations remain on-site.

Wilson Environmental Technologies, Inc. (2000) performed a wetland delineation at the site in 2000.

3. Phase II Investigation

3.1 Field Investigations

The initial phase of the environmental assessment consisted of collecting environmental and geotechnical samples. Results of the geotechnical sampling are provided in Section 4 of this report. Site photos are found in Appendix A. Boring logs and supplemental geotechnical information are in Appendix B. Environmental samples were collected from surface soil, surface water, sediment, subsurface soil, and groundwater. Surface and subsurface soil samples were collected in an area of surficial dumping (drum disposal area), areas of ash disposal, and areas of the site where construction operations would be expected to occur if the site were selected. Surface water and sediment samples were collected along present site runoff flow pathways. Upgradient and downgradient groundwater samples were collected to provide an indication of overall environmental conditions.

All environmental field investigations were performed in accordance with the August 2003 *Hudson River PCBs Superfund Site Facility Siting Work Plan* (Ecology and Environment, Inc.) and the September 2003 addenda to that plan, the *Site-Specific Field Investigations of the Final Candidate Sites* (Ecology & Environment, Inc.). Investigations at this site were performed in September and October 2003. A summary of investigation activities and dates is provided in Table 3.1-1.

Deviations from the Work Plan

The following deviations from the work plan occurred during the field program:

- Surface water sample OG-SW01 was not collected due to dry conditions at the time of sampling.
- Geotechnical borings OG-GT01, OG-GT02, and OG-GT03 were eliminated because sufficient geotechnical information had been acquired from a previous investigation.

3.2 Environmental Sampling Program

3.2.1 Temporary Well Installation and Groundwater Flow

Three temporary 1-inch polyvinyl chloride (PVC) wells were installed via direct push technologies (DPT). Well construction information is provided in Table 3.2-1. Before groundwater sampling, each temporary well was purged of three times the volume of water standing in the casing or to dryness (whichever occurred first). Water quality parameters measured in the field during purging are presented in Table 3.2-2. Groundwater sample results are described below.

Groundwater elevations were measured from each temporary well upon well completion and at two separate times following completion of the sampling program. In addition, a surface water elevation was obtained from the Hudson River at the eastern boundary of the site. The top of each temporary well and a reference mark on the stream gauge were surveyed so that an accurate elevation could be obtained. Table 3.2-3 summarizes the recorded elevations. Based on the limited information available from this study (three wells spaced at least 1,100 feet apart), groundwater flow beneath the site appears to be to the east towards the Hudson River (see Figure 3-1).

3.2.2 Field Sampling and Surveying

The environmental investigations at this site included collecting eight surface soil samples, two surface water samples, and four sediment samples; subsurface soil sampling and installation and sampling of temporary 1-inch monitoring wells via DPT at three locations; three geotechnical soil borings, and installation of one stream gauge for hydrologic monitoring purposes. Table 3.2-4 summarizes the total number of field and quality assurance/quality control (QA/QC) samples collected and the parameters for which they were analyzed. Figure 3-1 illustrates all environmental investigation locations. All sample locations and stream gauges were surveyed for both horizontal and vertical positions. Survey data is presented in Appendix C. All samples were collected in accordance with the project work plans. Field chemistry data recorded from surface water sample locations are presented in Table 3.2-2. Results from each sample medium are described below.

3.2.3 Data Usability

Soil, sediment, surface water, and groundwater samples were collected from various locations at each FCS (see Section 3.3). The samples were submitted to several environmental analytical laboratories for analytical testing as directed by EPA. Appendix D provides the complete analytical results, field quality control (QC) samples, and data

qualification. The specific data usability concerns regarding each FCS are still under evaluation as part of a detailed review of the hard copy data assessment reports. The following is a summary of general information regarding data usability determined from the electronic data review.

Out of a total of 3,156 reported values, 499 values were qualified during the data validation process. The data points that were qualified as estimated, bias low, or non-detect are considered useable for the purposes of this project. A total of 25 values were flagged as unusable, resulting in a completeness of more than 99.9%. Further evaluation of the data will include determining potential limitations of other qualified data and the impact of rejected data. In general, potential data limitations for the site are minor, as noted below:

- Low levels of several volatiles and pesticides were flagged “U” as non-detected. The results were generally below the reporting limit and, therefore, the data qualification has no impact on the data usability.
- Data qualified as unusable are for compounds that are generally highly reactive and not typically found during site investigations.
- Field blanks, including trip blanks, rinseates, and field duplicates, were collected to be applicable to all FCSs. The results are summarized in Appendix D. The results demonstrate good overall sampling and analysis precision and no significant field contamination.
- The laboratory reported tentatively identified compounds (TICs) for volatile and semivolatile compounds on the hard copy data package. TIC values are reported as “NJ” with presumptive evidence that the compounds are present and concentrations are considered highly estimated. The TICs are being reviewed to determine any indications of significant contamination not identified by the results for the known target compounds.

3.3 Environmental Sample Results and Evaluation

State and federal standards, criteria, and guidances were used for preliminary screening purposes during review of the analytical sample results for surface soil, subsurface soil, surface water, sediment, and groundwater. Exceedances of the criteria (with the exception of metals) are noted in Table 3.3-1 through 3.3-5 by shading the values that exceeded the criteria.

Metals cannot be directly compared to the criteria without additional evaluation (including evaluation of background levels) because metals occur naturally in the environment. Additionally, turbidity in surface water and groundwater samples can cause interference with metals analysis. These factors were considered in the evaluation of the significance of detected compounds.

The criteria were selected based on a review of available EPA and New York State Department of Environmental Conservation (NYSDEC) standards, criteria, and guidances for the various media sampled. The applicability of these preliminary screening criteria to the FCSs will be determined as part of further evaluation by EPA in consultation with NYSDDEC and the New York State Department of Health (NYSDOH).

The following discussion identifies the samples, by medium, with compounds exceeding the screening criteria. Those compounds without appropriate screening criteria also are identified. Where available, pertinent information for comparison purposes is provided.

Soil (Surface and Subsurface)

NYSDEC, *Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels* (1994) and subsequent amendments (December 20, 2000) (TAGM 4046). The recommended soil cleanup objectives and typical eastern USA background concentrations for metals contained in TAGM 4046 were used as preliminary screening guidance for soil. Where specific guidance values were available for surface and subsurface soils (such as for polychlorinated biphenyls [PCBs]) they were applied based on the depth of the samples collected. TAGM 4046 assumes a total organic carbon (TOC) of 1%.

Surface Water

NYSDEC, *Technical and Operational Guidance Series (T.O.G.S. 1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (1998). These standards and guidance provide values for various water classes. Since the majority of the surface water samples were collected from unnamed ditches and ponded water areas at the site, the surface water samples collected are assumed to be Class D waters. Class D waters are best used for fishing. However, due to natural conditions such as intermittent flow, water conditions may not be conducive to fish propagation. Class C waters are considered conducive to fish propagation. Surface water standards and guidance values are calculated for some inorganics based on water hardness.

Sediment

NYSDEC, *Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments* (1999). This guidance requires organic contaminants in sediments to be calculated based on sample TOC. TOC data were collected and used to calculate these screening values. Various criteria for bioaccumulation and acute and chronic toxicity are presented in this document for protection of human health, benthic aquatic life, and wildlife. The benthic aquatic life chronic toxicity protection level for sediment was selected as the preliminary screening value for all collected sediment samples.

Groundwater

NYSDEC, *Technical and Operational Guidance Series (T.O.G.S. 1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (1998) provides Class GA standards and guidance values. The *National Primary and Secondary Drinking Water Regulations, Current Drinking Water Standards* (2002) maximum

contaminant levels (MCLs) were used for preliminary screening for groundwater samples collected from the temporary wells.

3.3.1 Surface Soil

Volatile Organic Compounds (VOCs)

No VOCs that exceeded screening criteria were detected (see Table 3.3-1). The compound methyl acetate, a compound without screening criteria, was detected at a low concentration (4 µg/kg [J]) in OG-SS08 (see Table 3.3-1).

Semivolatile Organic Compounds (SVOCs)

The following polycyclic aromatic hydrocarbons (PAHs) exceeded criteria: benzo(a)pyrene (170 µg/kg [J] and 130 µg/kg [J]) in OG-SS01 (general ash disposal area) and OG-SS05 (drum disposal area); benzo(a)anthracene (730 and 51,000 µg/kg), benzo(a)pyrene (650 and 36,000 µg/kg), chrysene (860 and 56,000 µg/kg), and dibenzo(a,h)anthracene (180 µg/kg [J] and 12,000 µg/kg) in OG-SS07 and OG-SS08 (composite samples adjacent to rail spurs); and benzo(b)fluoranthene (59,000 µg/kg), benzo(k)fluoranthene (16,000 µg/kg), fluoranthene (99,000 µg/kg), indeno(1,2,3-cd)pyrene (28,000 µg/kg), and pyrene (82,000 µg/kg) in OG-SS08 (composite adjacent to rail spur) (see Table 3.3-1). Carbazole, which does not have a standard, was detected only in OG-SS08 (3,500 µg/kg [J]).

Pesticides

No pesticides that exceed the screening criteria were detected .

Herbicides

No herbicides that exceeded screening criteria were detected (see Table 3.3-1). Dichlorprop (21.4 µg/kg [J]) and 2,4-DB (118 µg/kg), compounds without screening criteria, were detected at OG-SS08 (see Table 3.3-1). 2,4-DB (43.6 µg/kg) was also detected at OG-SS07.

PCBs

No PCBs were detected in the surface soil samples.

Hexane Extractable Materials (Total Petroleum Hydrocarbons [TPHs])

TPHs were detected at 888 mg/kg at OG-SS08 (a composite sample taken along the rail spurs). There are no screening criteria for TPH.

Inorganics

Arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, mercury, nickel, selenium, vanadium, and zinc were found above NYSDEC screening values (see Table 3.3-1). Metals are naturally occurring constituents of soil that often exceed criteria. The levels of most of these metals are within or very close to the eastern USA background range. However, zinc (293 µg/kg) in OG-SS01, arsenic (54 µg/mg) in OG-SS03, arsenic (41.6 mg/kg [J]), nickel (2,240 mg/kg), and vanadium (9,900 mg/kg) in OG-SS06 (dark ash disposal area); zinc (274 mg/kg) in OG-SS07 (composite adjacent

to rail spur); and copper (6,560 mg/kg) and nickel (94.8 mg/kg) in OG-SS08 (composite adjacent to rail spur) exceeded more than three times the highest value of the eastern USA range.

Cyanide was detected all surface soil samples, except at OG-SS08, at concentrations ranging from 0.21 to 1.3 mg/kg. No standard is available for cyanide; however, these low concentrations are not of concern.

3.3.2 Subsurface Soil

VOCs

No VOCs exceeding screening criteria were detected (see Table 3.3-2). Compounds without screening criteria that were detected were cyclohexane (0.6 µg/kg[J]) and 2-butanone (21 µg/kg) at OG-GP03-SB (14 to 16 feet bgs).

SVOCs

Benzo(a)anthracene (1,400 µg/kg), benzo(a)pyrene (1,200 µg/kg), chrysene (1,400 µg/kg), and dibenzo(a,h)anthracene (240 µg/kg [J]) were found above their NYSDEC screening values in OG-GP03-SB (14 to 16 feet bgs), which is a downgradient sample in the southeast portion of the site.

Pesticides

No pesticides were detected in the subsurface soil samples.

PCBs

No PCBs were detected in the subsurface soil samples.

Inorganics

Arsenic, barium, beryllium, chromium, copper, iron, magnesium, nickel, zinc, and mercury were found above their standards in the subsurface soil samples (see Table 3.3-2). Metals are naturally occurring constituents of soil that often exceed criteria. The levels of most of these metals are within or very close to the eastern USA background range. However, arsenic (55.4 mg/kg [J]) in OG-GP01-SB exceeded more than three times the highest value of the eastern USA range.

Cyanide was detected at 0.33 mg/kg in sample OG-GP01. No standard is available for cyanide; however, these low concentrations are not of concern.

3.3.3 Surface Water

VOCs

No VOCs were detected above their screening criteria. Acetone, a compound without a screening criteria, was detected at low concentrations in both surface water samples (see Table 3.3-3). Acetone is a common laboratory contaminant and was detected in the trip blank; therefore, the presence of acetone in these samples is not of concern.

SVOCs

No SVOCs with screening criteria were detected (see Table 3.3-3). Bis(2-ethylhexyl)phthalate, a compound without screening criteria, was detected in OG-SW03 (2 µg/L[J]) (see Table 3.3-3). Phthalates are commonly detected in environmental samples as artifacts from the use of protective gloves in the field and in the lab. Since the level of phthalates is low in this sample, its presence is not of concern.

Pesticides

No pesticides were detected in the surface water.

PCBs

No PCBs were detected in the surface water.

Anions

Chloride, nitrate-N, and sulfate, compounds without screening criteria, were detected in all surface water samples (see Table 3.3-3). Nitrate-N concentrations were relatively uniform between the two surface water locations; however, chloride and sulfate concentrations were higher in OG-SW02.

Hardness

Hardness values were 465 mg/L and 165 mg/L at OG-SW02 and OG-SW03, respectively (see Table 3.3-3).

Inorganics

Iron was detected above its NYSDEC standard (see Table 3.3-3). Iron is a naturally occurring constituent of water that often exceeds criteria. Therefore, the presence of iron is not necessarily of concern.

3.3.4 Sediment**VOCs**

No VOCs exceeding screening criteria were detected (see Table 3.3-4). Compounds without screening criteria that were detected were acetone and methyl acetate (see Table 3.3-4). Acetone was detected at OG-SE01 (36 µg/kg [J]) and OG-SE03 (4 µg/kg [J]). Acetone is a common laboratory contaminant, and thus its presence in these samples may be a laboratory artifact and is therefore not of concern. Low levels of methyl acetate were detected in OG-SE01 (7 µg/kg [J]) and OG-SE02 (6 µg/kg [J]).

SVOCs

The only exceedance of SVOC standards was benzo(a)anthracene at OG-SE02 (270 µg/kg [J]) and OG-SE03 (120 µg/kg [J]) (see Table 3.3-4). Both locations are in a drainage ditch in the northwest corner of the site. Standards do not exist for several compounds: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, di-n-octylphthalate, and indeno(1,2,3-cd)pyrene. However, these compounds were all detected below method detection limits. Phthalates are commonly detected in environmental samples as artifacts from the use of protective gloves in the field and in

the lab. Since the level of phthalates is low in the sediment samples, their presence is not of concern. In general, the highest levels of SVOCs are found at OG-SE02.

Pesticides

The only exceedance of pesticide standards was for beta-BHC at OG-SE03 (2.1 µg/kg [J]), which is a downstream location in a drainage ditch in the northwest corner of the site (see Table 3.3-4). There are no criteria for 4,4'-DDD and 4,4' DDE; however, the levels detected were at or below method detection limits.

PCBs

No PCBs were detected in the sediment samples.

Inorganics

Arsenic, copper, iron, lead, manganese, nickel, silver, and mercury were found above NYSDEC screening values (see Table 3.3-4). Metals are naturally occurring constituents of sediment that often exceed criteria. While most of these values exceeded only the lowest effect criteria, nickel concentrations (408 and 179 mg/kg) were more than three times the severe effect level in OG-SE01 and OG-SE04.

Cyanide was detected at 0.38 mg/kg and 0.25 mg/kg in samples OG-SE01 and OG-SE04, respectively. No standard is available for cyanide; however, these low concentrations are not of concern.

Total Organic Carbon (TOC)

TOC was detected in sediment samples at concentrations ranging from 7,400 mg/kg to 220,000 mg/kg (see Table 3.3-4).

3.3.5 Groundwater

VOCs

No VOCs were detected in the groundwater samples.

SVOCs

No SVOCs were detected in the groundwater samples.

Pesticides

No pesticides were detected in the groundwater samples.

PCBs

No PCBs were detected in the groundwater samples.

Inorganics

Arsenic, iron, magnesium, manganese, and sodium were each detected in at least one well above NYSDEC and/or EPA screening values (see Table 3.3-5). Metals are naturally occurring constituents of groundwater that often exceed criteria. However,

since arsenic was detected in OG-GP01 (227 µg/L) at a level greater than three times NYSDEC and EPA criteria, its presence needs to be further evaluated.

4. Geotechnical Assessment

A subsurface field investigation was conducted at the OG Real Estate site to obtain geotechnical information. The primary purpose of collecting this data was to determine if there are geotechnical limitations associated with the use of the site for a sediment processing/transfer facility. Data collection included:

- Review of available subsurface information from previous studies; and
- Soil borings installation, which included logging the subsurface geology.

Presented below is a summary of the site geologic and geotechnical data collected.

Geotechnical samples were not collected at this site because such data were available from other studies. Subsurface geology was investigated at three locations (OG-GP01 - OG-GP03) during soil investigation for environmental sampling using direct-push technology (DPT). A 4-foot soil collection interval was used to collect a continuous soil profile from the ground surface to approximately 25 feet bgs. DPT soil boring logs are presented in Appendix B.

Soil strata were similar across the site. East of the power line right-of-way, layers of silt and very fine sand underlie the site topsoil to a depth of approximately 24 feet, where a layer of gravel with intermixed sand and clay extends to at least a depth of 56 feet. Similar silts and very fine sands are also present at the northern end of the site to a depth of at least 25 feet and at the southern end of the site to a depth of approximately 16.5 feet. The southern silt and sand layers are underlain by approximately 3 feet of clay, beneath which lies sand to a depth of at least 25 feet.

Existing Site Data from Other Studies

According to site representatives, Normans Kill formerly traversed this property. This water body was re-routed to form an eastern turn to empty into the Hudson River at what has become the northern end of the property. The remaining ditch was reportedly filled with fly ash from the nearby Niagara Mohawk power plant located adjacent to the southern end of the property. A March 1996 report published by Law Engineering also indicates this area was filled with fly ash. Law installed numerous borings across the site to determine fly ash thickness. They concluded that west of the railroad that bisects the property (in a north-south direction), fly ash fill thickness is present in an elliptical shape, with depths ranging from ground surface at the outer ends to 18.5 feet in the center. East of the railroad spur, Law reports fly ash thickness in approximately the southern two-thirds of the site as varying in thickness from the ground surface at the perimeter to 27.5 feet in the center. In a January 1997 report, Law also provides geologic cross section data that shows fly ash paralleling the Hudson River shoreline, west of the railroad, consists mostly of combinations of silt, clay, and fine sand. Fly ash was not encountered

in the northern end of the site. A sand and gravel fill overlies a silt and clay layer, which in turn is underlain by a much thicker bed of silty fine sand and gravel. Silty fine sand underlies the entire site. Law's east-west cross section of the site shows two distinct bottom-ash/fly ash deposits separated by the railroad spur, which sits atop a silty fine sand and a silty and clay layer. This cross section also shows silty fine sand underlies the entire site. Law's cross section of the site's southern end indicates silt and clay underlie the entire end. Adjacent to the Hudson River, a silty fine sand lies between the ash deposit and the silt and clay. Further inland, a silty, clay, and fine sand deposit lies between the ash and the underlying silt and clay.

Recra Research, Inc. and Wehren Engineering, P.C. (1996) indicated that the ash was placed as a slurry and is soft, exhibiting engineering characteristics similar to soft silt. However, they also report that it has a lower density and different surface characteristics that cause it to be somewhat more pervious to water and somewhat more compressible than a similar depth of natural silts.

A preliminary geotechnical engineering evaluation for the site was prepared by Empire Soils (1982). In addition to subsurface geologic boring data to depths of nearly 100 feet, recorded on soil boring logs, it also provides geotechnical evaluation such as slope stability analysis, settlement analysis, and a clay deposit characterization. It also provides compression test data and permeability test data. This report is not included in Appendix B due to its size.

5. Utility Assessment

5.1 Preliminary Assessment

A preliminary utility assessment was completed as part of the site-specific field investigation of the Final Candidate Sites. Major site utilities identified on-site are shown on Figure 2-1. The assessment included the following steps:

- 1) Observations of site surface utilities such as overhead power or telephone lines, electrical transformers, manholes, sewer outfalls, and water hydrants were made.
- 2) Dig Safely New York (Dig Safe) was contacted as part of the utility clearance process before subsurface/intrusive work activities, including direct communication with various utility operators, as needed. Operators of on-site utilities provided information.
- 3) Available site maps were reviewed. Maps were obtained from various sources, including property owners.

It is anticipated that further utility assessments will be completed at the Recommended Sites. Further assessment may include contacting local municipal offices for information, opening manholes to determine flow paths, and dye testing. Further assessment may be conducted as part of the design evaluation process or during other additional investigation of Recommended Sites.

5.2 Findings and Observations

Utilities identified at the OG Real Estate site include the following:

- A high-voltage overhead Niagara Mohawk electrical power transmission line right-of-way runs north-south through the center of the site.
- Two high-pressure natural gas transmission pipelines (Dominion Gas and Niagara Mohawk Gas) are located within the Niagara Mohawk electrical power line corridor.
- The Town of Bethlehem reports that they operate subsurface sewer and water service lines located on the west side of Route 144. Route 144 is located west and south of the site.

6. Survey of Terrestrial, Archaeological, and Architectural Resources (STAAR)

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effect that facility siting may have on cultural resources that are listed or are eligible for listing on the National Register of Historic Places (NRHP). Phase IB field investigations continued the cultural resources studies and are specifically designed to determine the presence and extent of cultural resources within the OG Real Estate site (see *Addenda to the Hudson River PCBs Superfund Site Facility Siting Work Plan: Site-Specific Field Investigations of the Final Candidate Sites*). The field activities involved archaeological, geomorphological, and architectural investigations.

Phase I investigations were previously completed by Dr. Edward V. Curtin (September 2003) for the OG Real Estate property (Figure 6-1). Preliminary review indicates that this site has been surveyed and no additional investigations were recommended. Further investigations will not be required if the report recommendations are accepted by the New York State Historic Preservation Office (NYSHPO). Therefore, no geomorphological fieldwork was conducted at this site as part of this investigation.

However, archaeological fieldwork of a small portion of the site that had not been included in the Curtin investigation was conducted on November 15, 2003. This area was a high hill overlooking the Hudson River. It appeared that the southern two-thirds of this hill had been blasted or excavated away.

A foundation and mortared brick cistern was located within the site, but shovel testing nearby found no cultural resources. Pending complete analysis, no further investigations are recommended.

Although no architectural investigations were conducted at this site, none are recommended pending final NYSHPO approval of the previous investigation conducted at the site. Final NYSHPO site approval should be reviewed to confirm that no additional work is required.

7. Wetland Assessment

7.1 Determination and Delineation Methods

Wetland determinations/delineations were not conducted on the OG Real Estate property as part of the field site-specific field investigations of the Final Candidate Sites. A Section 404 Wetland Delineation Report, prepared by Wilson Environmental Technologies, Inc (2000) and recently approved by the U.S. Army Corps of Engineers (USACE), mapped wetlands that were observed during habitat assessment fieldwork on October 15, 2003. Applicable wetland data (e.g., soil surveys, National Wetland Inventory [NWI] mapping, etc.) were reviewed beforehand to provide background information.

The OG Real Estate site was reportedly used as a coal ash disposal site for the former Niagara Mohawk power plant that is located adjacent to the southern boundary of the site. Rerouting of Normans Kill, which originally flowed north-south through the site, resulted in a large ditch that bisected the site. Niagara Mohawk subsequently used this ditch for disposal of fly ash.

7.2 Review of Existing Information

Review of NWI mapping indicated the site contained approximately 57.63 acres of wetlands. These wetlands were classified as PFO1Eh (palustrine, forested, broadleaved deciduous, seasonally flooded/saturated, diked/impounded), PEM1Eh (palustrine, emergent, broadleaved deciduous, seasonally flooded/saturated, diked/impounded), and PSS1Eh (palustrine, scrub-shrub, broadleaved deciduous, seasonally flooded/saturated, diked/impounded) [see Figure 7-1]). NYSDEC wetland mapping identified one wetland encompassing 73.14 acres of the site. This wetland was identified as freshwater wetland D-6. However, the Wilson Environmental Technologies, Inc. [Wilson Inc.] report contains a letter from NYSDEC indicating that wetland D-6 was mapped in error and was in the process of being removed from their wetland mapping database.

7.3 Results of the Wetland Assessment

The result of the Wilson Inc. delineation and the subsequent USACE site visit was the identification of three wetlands, totaling 0.92 acres (Table 7-1). Two wetlands in the southeastern portion of the site (Figure 7-1) were located along the shoreline approximately 15 feet below the prevailing elevation of the site in the area. Although not fully identified in the Wilson Inc. report, these areas are believed to be riparian emergent wetlands subject to frequent inundation, based on river stage. The third wetland (Wetland C) is located near the shoreline in the northeastern corner of the site. This wetland is a forested floodplain area, likely subjected to seasonal inundation. Further details of the site evaluation can be found in the Wilson Inc. report.

Table 7-1 Wetland Summary

Wetland ID	Community Type	Acreage
Wetland A	R1EM	0.16
Wetland B	R1EM	0.55
Wetland C	PFO	0.21
Total Acreage		0.92

Key

R1EM = Riverine emergent.

PFO = Palustrine forested.

8. Floodplain Assessment

An initial floodplain assessment was conducted on the OG Real Estate site in order to determine the presence, extent, and orientation of Federal Emergency Management Agency (FEMA)-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding. Appendix E provides the methodology and assumptions involved in this assessment.

8.1 Location and Orientation of the Floodplain

Figure 8-1 shows that a majority of the OG Real Estate site occurs within the 100-year and 500-year floodplains. The floodplain areas were obtained from Flood Hazard Boundary Maps and the Town of Bethlehem Flood Insurance Study (June 1983) from FEMA's Federal Insurance Administration.

The site is located on the west side of the Hudson River in the Town of Bethlehem. The total area of the site is approximately 94.9 acres (see Table 8-1). Approximately 92.5% (87.8 acres) of the site is within the base (100-year) floodplain, which is primarily land adjacent to the Hudson River (Figure 8-1). River frontage along the site is approximately 2,500 feet in length.

The site is mapped as occurring almost entirely within the 100-year floodplain, except for a portion in the southwest corner and a narrow strip of land along the western site boundary. The entire width (1,450 feet) of the northern portion of the site is within the 100-year floodplain (Figure 8-1).

Table 8-1 Summary of OG Real Estate Site and Floodplain Characteristics

Is a portion of the site in the base (100-year) floodplain?	Yes
Total area of the site	94.9 acres (4,133,497 ft ²)
Area of the site within the base (100-year) floodplain	87.8 acres (3,824,181 ft ²)
Percentage of the site within the base (100-year) floodplain	92.5%
Perimeter of the site (total length)	9,547 ft
Perimeter of the site bordering the Hudson River (river frontage)	~2,500 ft
Greatest width between the outer boundary of the base floodplain and the Hudson River boundary	~1,450 ft

8.2 100-year Flood

The FEMA maps show the 100-year flood elevation at the OG Real Estate site to be 19 feet National Geodetic Vertical Datum (NGVD). A brief examination of site topography and the FEMA mapping suggests that site elevation characteristics have not changed significantly since the FEMA floodplain modeling and mapping occurred.

The closest gauge station with historic flow data is the Troy gauge (per the National Weather Service station TRYN6, which is also the same as the U.S. Geological Survey (USGS) station 01358000 on Green Island). The Troy/Green Island gauge station is approximately 10 miles upstream of the OG site. The Troy/Green Island gauge station flood stage is 24 feet NGVD. At this elevation water reaches mobile homes along the riverfront in Lansingburgh. At 27 feet, there have been numerous evacuations, with approximately 1,000 cellars and 300 homes affected. At 29 feet, there are disaster conditions with several feet of water on riverside streets (National Weather Service Advanced Hydrologic Prediction Service web page, <http://ahps.erh.noaa.gov/cgi-bin/ahps.cgi?aly&Hudson%20River>).

Flood magnitudes were calculated from fifty-seven years of flow data at the Troy/Green Island gauge station. Based on this data, the 100-year flood stream flow for this station is 200,590 cubic feet per second (cfs). A flood of this magnitude has not occurred in the fifty-seven years of modern data. In that time, there have been five flow events greater than a 10-year flood, including three that were also greater than a 20-year flood (December 12, 1931; March 14, 1977; and January 20, 1996).

8.3 Local Flooding

Because the site is within the estuary portion of the Hudson River, there are no data available from the NYSCC that are relevant for examining on-site flooding issues.

Spot elevations surveyed along the land-river edge of the site boundary range from -1.3 foot to -0.3 feet NGVD. The contour information (5-foot intervals) provided with 2002 aerial photography of the site shows a 5-foot contour line running along the land-river edge. Consequently, the 100-year flood would put the river frontage of the site under approximately 19 feet of water.

While the probability of a 19-foot inundation event (100-year flood) is remote, there is the possibility of flooding on a smaller scale. The Flood Insurance Study shows the 10-year flood profile in the vicinity of the site to be 13 feet NGVD. The study indicates that flooding may occur during any season. However, the majority of major floods have occurred during the months of February, March, April, and May. Through the time of the report (1983), the five worst floods on the Hudson River that caused damage in the City of Rensselaer were identified as February 1900 (80-year flood), March 1902 (50-year flood), March 1913 (120-year flood), March 1936 (35-year flood), and January 1949 (30-year flood).

9. Coastal Management Area Assessment

The OG Real Estate site is located within the state-defined Hudson River Coastal Management Area. In addition, the City of Albany has an approved Local Waterfront Revitalization Program (LWRP) (City of Albany 1991). The state CMP provides for policies and procedures on development and other activities within the state-defined coastal zone. The Albany LWRP provides additional purposes and objectives of the city's planned uses for the Albany coastal zone.

If the OG Real Estate site were selected as a site for the Phase 1 and Phase 2 dredging, the siting of a sediment processing/transfer facility at this location would be consistent with the NYS CMP development policies to revitalize underutilized waterfront areas for commercial and industrial uses (Policy 1) and to facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters (Policy 2). It is anticipated that the layout, construction, and operation of the facility at the OG Real Estate site would not have adverse effects on other relevant policies of the state CMP.

EPA will prepare an additional phase of its coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

The OG Real Estate site is located in the Town of Bethlehem, outside the Albany City limits. The Albany LWRP southern boundary is the centerline of the Normans Kill Creek, just north of the OG Real Estate site boundary. Thus, the OG Real Estate site is not within the area defined as including the City of Albany LWRP. In addition, the existing location of industrial facilities north (Port of Albany) and south (Niagara Mohawk power plant) of the OG Real Estate would likely omit any negative impacts associated with further development of water-dependent industrial uses in this area. Consequently, if the OG Real Estate site were selected as a Recommended Site, consistency with the state CMP could be attained.

10. Baseline Habitat and Threatened and Endangered Species Assessment

10.1 Site Habitat Description

The OG Real Estate site description information is presented in the *Addenda to the Hudson River PCBs Superfund Site Facility Siting Work Plans: Site-Specific Field Investigations of the Final Candidate Sites* (Ecology and Environment, Inc. September 2003). In brief, historic and current land uses have greatly influenced the availability, extent, and diversity of on-site habitats. The site is situated on the west side of the river, just south of the confluence of Normans Kill with the Hudson River and the Port of Albany. This site was formerly used for ash dumping from the Niagara Mohawk power plant that is adjacent to the south end of the site. Normans Kill historically traversed the site but was rerouted past a former marina to the north, leaving an island between the ditch and the old shoreline. Niagara Mohawk then filled in the ditch with ash, eliminating the island. Currently, there are no active uses on the site. Given the historic and current site uses, the majority of the site is disturbed and consists of successional northern hardwoods and successional old field community types. The majority of the habitats on-site are composed of early successional (less than 20 years) to mid-successional (20 to 60 years) vegetation communities. Some bottomland-forested areas near the shoreline are late successional in age (> 60 years); cottonwoods are the dominant mature trees.

Figure 10-1 shows the habitat community types, as defined by Edinger et al. (2002) that are present on the site. Field investigations were conducted on October 15, 2003 to determine habitat availability within the site and to provide descriptions of existing habitat structure, diversity, and condition. Nine community types are found on this 95-acre site (Figure 10.1). No significant or unique habitats were among them. The predominant communities (relative to total cover across the site) are briefly described below. A description of the different community types from Edinger et al. (2002) is presented in Appendix F.

Successional Northern Hardwood

The successional northern hardwood (SNH) community is prevalent across the site, accounting for approximately 49% of the total area. The predominant trees in the SNH community are quaking aspen, black locust, cottonwood, box elder, paper birch, and gray birch. Occasional tree species include silver maple, black willow, green ash, sugar maple, red cedar, red oak, bitternut hickory, tree-of-heaven, and Eastern white pine. Shrubs include honeysuckle spp., hawthorn spp., and prickly ash. Common herb and vine species include *Phragmites australis*, wild grape, goldenrods, jewelweed, ostrich fern, Virginia creeper, *Filanthros* spp., sedges, poison ivy, and garlic mustard. Areas along the northern border of Normans Kill include the following species: black willow, slippery elm, silver maple, red cedar, sumac, red osier dogwood, gray dogwood, honeysuckle spp., American plum, blackberries, wild grape, asters, and goldenrods.

Successional Old Field

The abundant species within the successional old field (SOF) community type is *Phragmites* spp. This community comprises approximately 27% of the site. Common

species observed included asters, goldenrods, thistle, Queen Anne's lace, garlic mustard, bluegrass species, broomsedge, wild grape, and sedges. Small stands of trees and shrubs were interspersed within and occurred along the edges of this community. The common species included quaking aspen, gray birch, and black locust.

Other Communities

The successional old field/mowed pathway community type is compositionally similar to the SOF and accounts for approximately 16% of the site. The exception is related to management along the power line transmission corridor, where plant community structure and age are influenced by periodic maintenance. The predominant species in the successional shrubland community type are sumac, dogwoods (gray, silky, and red osier), green ash, American plum, honeysuckle spp., red cedar, and prickly ash. The species in the herbaceous layer include asters, *Phragmites australis*, thistle, goldenrods, blackberries, bluegrass species, and sedges. There is one marsh headwater stream that traverses the northeast corner of the site. This stream is a low gradient, meandering channel, with dense vegetation (mainly *Phragmites australis*) along the streambank. Wetland communities occurring on-site are discussed in further detail in Section 7.

The site shoreline exhibits the characteristics of a tidally influenced river shore. The Hudson River below Federal Dam is exposed to daily tidal fluctuations. Most of the shoreline is shallow with a sand/gravel substrate. At low tides, shallow sandy flats are exposed. The southern end of the site has a 10- to 15-foot elevation change between the top of the bank and the shoreline. This grade gradually decreases heading north along the shoreline to an approximate 2- to 3-foot elevation change between the top of bank and the shoreline. Normans Kill Creek, which is adjacent to the northern end, has relatively high (> 15 feet above water level), steep banks that appear to inhibit the flow of water from the creek to the site.

Common vegetation species and the community structure have an influence on wildlife occurrence on-site. Given the overall size of the site (91 acres), a variety of animal species use the site, including whitetail deer, waterfowl, and migrating passerines. The combination of forest and field habitats provides edge habitat and a range of food and cover types for a variety of species. Incidental wildlife observations included whitetail deer, gray squirrel, mallards, turkey vulture, and a variety of common songbirds.

10.2 Endangered Species Act Issues

Shortnose sturgeon is identified as a federally and state-listed species that could potentially seasonally occur near the OG Real Estate site. Shortnose sturgeon habitat extends from the mouth of the Hudson River in New York City to the Federal Dam at Troy (upstream from the site). Coordination and consultation with NYSDEC and the National Marine Fisheries Service (NMFS) have occurred as part of the facility siting process and for developing the details of a biological assessment for the Hudson River PCBs Superfund Site project. This consultation revealed that the portion of the river in the vicinity of the OG site is a known spawning area for shortnose sturgeon.

If the OG site is selected as a Suitable Site, the biological assessment will address any potential impacts to shortnose sturgeon as a result of the construction and operation of the a sediment processing/transfer facility. The biological assessment will include a literature review and any pertinent studies that are related to the habitat near this site as well as life history information on the shortnose sturgeon.

Table 3.1-1 Summary of Activities, Hudson River PCBs Superfund Site

		Energy Park/Longe/ NYS Canal Corporation Site	Old Moreau Dredge Spoils Area/NYS Canal Corporation Site	Georgia Pacific/ NYS Canal Corporation Site	NYS Canal Corporation/ Allco/Leyerle Site	Bruno/Brickyard Associates/ Alonzo Site	State of New York/First Rensselaer/ Marine Management Site	OG Real Estate Site
Environmental Investigation	Environmental Sampling	09/29/03 - 09/30/03	09/30/03 - 10/01/03	10/08/03 - 10/09/03	10/01/03 - 10/03/03	10/03/03 - 10/07/03	10/08/03	10/07/03
	Temporary Well Installation	09/29/03 - 10/01/03	10/02/03	10/08/03	10/09/03	10/09/03 - 10/10/03	10/03/03 - 10/06/03	10/07/03
	Temporary Well Sampling	10/16/03	10/14/03 - 10/16/03	10/13/03 - 10/14/03	10/15/03	10/15/03 - 10/16/03	10/10/03 - 10/15/03	10/15/03
Surveying		10/01/03 - 11/11/03	10/08/03 - 11/11/03	10/09/03 - 10/29/03	10/21/03 - 10/31/03	10/15/03 - 10/29/03	10/21/03 - 11/10/03	11/11/03 - 11/13/03
Geotechnical Investigation		09/29/03 - 10/01/03	NA	10/08/03	10/07/03 - 10/09/03	10/09/03 - 10/10/03	10/03/03 - 10/06/03	NA
Utilities Assessment		09/29/03 - 09/30/03	09/30/03 - 10/01/03	10/08/03 - 10/09/03	10/01/03 - 10/03/03	10/03/03 - 10/07/03	10/08/03	10/07/03
STAAR		10/06/03 - 10/16/03	10/13/03 - 10/30/03	10/11/03 - 10/28/03	10/23/03 - 11/13/03	10/17/03 - 11/05/03	10/25/03 - 11/14/03	11/15/03
Wetland Assessment		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Floodplain Assessment		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Coastal Management Areas		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Baseline Habitat Assessment		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Threatened and Endangered Species Assessment		09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
IDW Disposal		TBD	TBD	TBD	TBD	TBD	TBD	TBD

Key:

- IDW = Investigation-derived waste.
- NYS = New York State.
- PCBs = Polychlorinated biphenyls.
- STAAR = Survey of Terrestrial Archaeological and Architectural Resources
- TBD = To be determined.

Table 3.2-1 Summary of Temporary Well Construction, Hudson River PCBs Superfund Site

Site	Well/Piezometer No.	Date Started	Date Completed	Drilling Company	Date Sampled	Depth Drilled (Feet BGS)	Ground Elevation (Feet AMSL)	PVC Well Casing/ Screen I.D. (inches)	Total Depth (Feet TOIC)	TOIC Casing Elevation (Feet AMSL)	Screened (0.010 slot) Interval (Feet BGS)	Sand Interval (Feet BGS)	Seal Interval (Feet BGS)	Stick-up (Feet AGS)
EPL	EPL-GP01	9/29/03	9/29/03	N	10/16/03	25.4	135.11	1	27.4	137.2	15.4-25.4	5-25.4	2-5	2.0
	EPL-GP02	9/29/03	9/29/03	N	10/16/03	25	137.91	1	27.4	140.42	15-25	4-25	2-4	2.4
	EPL-GP03	9/29/03	9/29/03	N	10/16/03	25.1	135.52	1	27.51	137.99	15.1-25.1	4-25.1	0.6-4	2.41
	EPL-GP04	10/1/03	10/1/03	N	10/16/03	25	129.47	1	27.3	131.79	15-25	4-25	2-4	2.3
	EPL-GP05	10/1/03	10/1/03	N	10/16/03	25	132	1	27.5	134.53	15-25	4-25	2-4	2.5
OM	OM-GP01	10/2/03	10/2/03	N	10/16/03	25	157.67	1	27.4	160.19	15-25	4-25	2-4	2.4
	OM-GP02	10/2/03	10/2/03	N	10/16/03	25.4	141.79	1	27.62	144.2	15.3-25.3	4-25.3	2-4	2.32
	OM-GP03	10/2/03	10/2/03	N	10/15/03	25	155.84	1	27.3	158.37	10-25	4-25	2-4	2.3
	OM-GP04	10/2/03	10/2/03	N	10/15/03	25	143.5	1	22.5	146	10-20	4-25	0-4	2.5
	OM-GP05	10/2/03	10/2/03	N	10/14/03	25	133.43	1	27.5	135.93	15-25	4-25	0-4	2.5
GPS	GPS-GP01	10/9/03	10/9/03	N	10/13/03	25	108.4	1	28.15	111.60	15-25	4-25	2-4	3.15
	GPS-GP02	10/8/03	10/8/03	N	10/14/03	9.3	108.68	1	11.8	111.19	4.3-9.3	3-9.3	0.5-3	2.5
	GPS-GP03	10/8/03	10/8/03	N	10/14/03	25.5	102.76	1	27.55	104.76	15.5-25.5	4-25.5	2-4	2.05
	GPS-GP04	10/8/03	10/8/03	N	10/14/03	25.7	112.02	1	28.2	114.48	15.7-25.7	4-25.7	2-4	2.5
	GPS-GP05	10/8/03	10/8/03	N	10/13/03	25	100.71	1	27.45	103.31	14.85-24.85	4-25	2-4	2.6
	GPS-GP06	10/9/03	10/9/03	N	10/14/03	25	110.76	1	17.5	113.24	5-15	3-15 ^A	1-3	2.5
	GPS-GP07	10/9/03	10/9/03	N	10/14/03	25	112.98	1	22.4	115.38	10-20	3-20 ^B	0.5-3	2.4
	GPS-GP08	10/8/03	10/8/03	N	10/13/03	18.5	113.36	1	19.7	114.74	8.5-18.5	3-18.5	1-3	1.2
NCC	NCC-GP01	10/9/03	10/9/03	N	10/15/03	25	48.53	1	25.5	51.02	13-23	4-23 ^C	2-4	2.5
	NCC-GP02	10/7/03	10/7/03	N	-	6.9	52.5	Dry hole - no well constructed						
	NCC-GP03	10/9/03	10/9/03	N	10/15/03	22.9	43.56	1	23.65	46.2	11-21	4-22.9	2-4	2.65
	NCC-GP04	10/3/03	10/3/03	N	-	2	65.89	Not accessible by rig, boring was hand-augered						
	NCC-GP05	10/7/03	10/7/03	N	-	11	51.52	Dry hole - no well constructed (same as boring NCC-GT01)						
BBA	BBA-GP01	10/10/03	10/10/03	N	10/15/03	25	131.88	1	18.6	134.39	6-16	4-16 ^D	0.5-4	2.6
	BBA-GP02	10/10/03	10/10/03	N	10/16/03	25	144.41	1	18.55	146.87	6-16	4-18 ^E	0.5-4	2.55
	BBA-GP03	10/9/03	10/9/03	N	10/15/03	18.3	76.45	2	19.62	77.77	3.8-13.8	2.8-18.3	0-2.8	1.32
	BBA-GP04	10/10/03	10/10/03	N	10/15/03	14	77.57	1	16.8	80.38	3.5-13.5	2-14	0.5-2	2.8

Table 3.2-1 Summary of Temporary Well Construction, Hudson River PCBs Superfund Site

Site	Well/Piezometer No.	Date Started	Date Completed	Drilling Company	Date Sampled	Depth Drilled (Feet BGS)	Ground Elevation (Feet AMSL)	PVC Well Casing/	Total Depth (Feet TOIC)	TOIC Casing Elevation (Feet AMSL)	Screened (0.010 slot) Interval (Feet BGS)	Sand Interval (Feet BGS)	Seal Interval (Feet BGS)	Stick-up (Feet AGS)
MM	MM-GP01	10/6/03	10/6/03	N	10/10/03	25	18.73	1	27.4	20.52	15-25	4-25	2-4	2.4
	MM-GP02	10/3/03	10/3/03	N	10/10/03	25	5.87	1	27.6	7.75	15-25	4-25	2-4	2.6
	MM-GP04	10/6/03	10/6/03	N	10/15/03	25	15.50	1	27.4	17.22	14.5-24.5	4-24.5	2-4	2.9
OG	OG-GP01	10/7/03	10/7/03	N	10/15/03	25	10.28	1	17.70	12.94	5.35-15.35	3-16 ^E	1-3	2.35
	OG-GP02	10/7/03	10/7/03	N	10/15/03	25.1	14.26	1	27.35	16.46	15.1-25.1	4-25.1	2-4	2.25
	OG-GP03	10/7/03	10/7/03	N	10/15/03	25	17.95	1	27.45	20.4	15-25	4-25	2-4	2.45

^A Hole was allowed to collapse to 10.15 feet BGS.

^B Hole was allowed to collapse to 20 feet BGS.

^C Hole was allowed to collapse to 23 feet BGS.

^D Hole was allowed to collapse to 18 feet BGS.

^E Hole was allowed to collapse to 16 feet BGS.

Key:

AGS = Above ground surface.

AMSL = Above mean sea level.

BBA = Bruno/Brickyard Associates/Alonzo Site.

BGS = Below ground surface.

EPL = Energy Park/Longe/NYS Canal Corporation Site.

GP = Geoprobe temporary well location.

GPS = Georgia Pacific/NYS Canal Corporation Site.

I.D. = Inner diameter.

MM = State of New York/First Rensselaer/Marine Management Site

N = Northstar Drilling.

NCC = NYS Canal Corporation/Allco/Leyerle Site.

NYS = New York State.

OG = OG Real Estate.

OM = Old Moreau Dredge Spoils Area / NYS Canal Corporation Site.

PVC = Polyvinyl chloride.

TOIC = Top of inner casing.

**Table 3.2-2 Groundwater and Surface Water Field Measurements
OG Real Estate Site**

Sample ID	Date	pH (s.u.)	Temperature (°C)	Conductivity (mS/cm)	Turbidity (NTU)
Groundwater					
OG-GP01-GW	10/15/03	7.04	13.9	1,427	5.18
OG-GP02-GW	10/15/03	6.95	10.6	1,398	37.6
OG-GP03-GW	10/15/03	6.93	11.7	2,465	185
Surface Water					
OG-SW01	10/7/03	Dry			
OG-SW02	10/7/03	7.25	7.6	1,509	21.1
OG-SW03	10/7/03	7.05	14.6	226.2	9.16

Key:

- °C = Degrees Celsius.
- GP = Boring location.
- GW = Groundwater sample.
- ID = Identification.
- mS/cm = MicroSiemens per centimeter.
- NTU = Nephelometric turbidity units.
- NYS = New York State.
- OG = OG Real Estate Site.
- s.u. = Standard units.
- SW = Surface water sample.

**Table 3.2-3 Summary of Water Level Elevations
OG Real Estate Site**

Well/ Stream Gauge ID	Ground Elevation (ft AMSL)	Reference Elevation (ft AMSL) ^a	10/15/03		10/22/03		11/6/03	
			Water Level (ft TOIC)	Water Elevation (ft AMSL)	Water Level (ft TOIC)	Water Elevation (ft AMSL)	Water Level (ft TOIC)	Water Elevation (ft AMSL)
OG-GP01	10.28	12.94	6.40	6.54	6.72	6.22	3.14	9.80
OG-GP02	14.26	16.46	13.27	3.19	15.21	1.25	13.17	3.29
OG-GP03	17.95	20.40	18.42	1.98	19.19	1.21	17.36	3.04
OG-SG01	NA	5.06	NM	NM	8.10	-1.91	2.72	4.78

^a Reference elevation is TOIC for borings and 3-foot mark on gauge for stream gauges.

Key:

AMSL = Above mean sea level.

ft = Feet.

GP = Boring location.

NA = Not applicable.

NM = Not measured.

OG = OG Real Estate Site.

SG = Stream gauge location.

TOIC = Top of inner casing.

Table 3.2-4 OG Real Estate Site Sample Listing, Hudson River PCBs Superfund Facility Siting

Media	Date	Sample Location	CLP Number	Matrix Code	Depth A	Type	CLP		TCL VOCs (OLM04.2)	TCL SVOCs (OLM04.2)	TCL Pesticides/PCBs (OLM04.2)	TAL Metals/Mercury (ILM04.1)	TAL Cyanide (ILM04.1)	% Solids (ASTM_D2216)	Chlorinated Herbicides (8151A)	Anions (9056)	TOC (Lloyd Kahn)	Hardness (130.2)	Hexane Extractable Material (907)	TCLP VOCs	TCLP SVOCs	TCLP Metals/Mercury	Particle Size (ASTM_D422-63)	Atterberg Limits (ASTM_D4318-00)	Moisture Content (ASTM_D2216-98)	Area of Interest
							Organics	Inorganic																		
Surface Soil	10/7/03	OG-SS01	B1593	SO	0-2 in	N			X	X	X	X	X	X												Near abandoned transformer
	10/7/03	OG-SS02	B1594	SO	0-2 in	N			X	X	X	X	X	X												General coverage in potential railyard area
	10/7/03	OG-SS03	B1595	SO	0-2 in	N			X	X	X	X	X	X												General coverage in potential railyard area
	10/7/03	OG-SS04	B1596	SO	0-2 in	M			X	X	X	X	X	X												General coverage in potential railyard area
	10/7/03	OG-SS05	B1597	SO	0-2 in	N			X	X	X	X	X	X												General coverage on former island - potential facility area
	10/7/03	OG-SS06	B1598	SO	0-2 in	N	X	X	X	X	X	X	X	X												Area of exposed ash at surface
	10/7/03	OG-SS07	B1599	SO	0-2 in	N	X	X	X	X	X	X	X	X	X				X							Composite of 4 locations (A, B, C, D) adjacent to railroad track area (VOA portion was a discrete sample from the location of aliquot D)
	10/7/03	OG-SS08	B15A0	SO	0-2 in	N	X	X	X	X	X	X	X	X	X				X							Composite of 3 locations (A, B, C) adjacent to railroad track area, which is adjacent to abandoned diesel train engines (VOA portion was a discrete sample from the location of aliquot A)
Surface Water	-	OG-SW01	-	SW	-	N																				Wetland area in central portion of site - DRY
	10/7/03	OG-SW02	B1578	SW	-	N	X	X	X	X	X	X	X	X		X		X								Drainage ditch in northwest corner of site-upstream
	10/7/03	OG-SW03	B1592	SW	-	N	X	X	X	X	X	X	X	X		X		X								Drainage ditch in northwest corner of site-downstream
Sediment	10/7/03	OG-SE01	B1581	SE	0-2 in	N	X	X	X	X	X	X	X	X			X									Wetland area in central portion of site
	10/7/03	OG-SE02	B1582	SE	0-2 in	N	X	X	X	X	X	X	X	X			X									Drainage ditch in northwest corner of site-upstream
	10/7/03	OG-SE03	B1584	SE	0-2 in	N	X	X	X	X	X	X	X	X			X									Drainage ditch in northwest corner of site-downstream
	10/7/03	OG-SE04	B1576	SE	0-2 in	N	X	X	X	X	X	X	X	X			X									Downstream of on-site surface water flow
Geoprobe Borehole Subsurface Soil	10/7/03	OG-GP01-SB	B15A1	SO	2.5-4	N	X	X	X	X	X	X	X	X												Upgradient-central
	10/7/03	OG-GP02-SB	B15A2	SO	13.8-15.8	N	X	X	X	X	X	X	X	X												Downgradient-northeast
	10/7/03	OG-GP03-SB	B15A3	SO	14-16	N	X	X	X	X	X	X	X	X												Downgradient-southeast
Geoprobe Temporary Well	#####	OG-GP01-GW	B15A4	GW	5.35-15.35	N	X	X	X	X	X	X	X	X												Upgradient-central
	#####	OG-GP02-GW	B15A5	GW	15.1-25.1	N	X	X	X	X	X	X	X	X												Downgradient-northeast
	#####	OG-GP03-GW	B15A6	GW	15-25	N	X	X	X	X	X	X	X	X												Downgradient-southeast

Key at the end of Table

02:001515_HR03_08_03_00-B1317
OG T3_2-2 to T3_2-4.xls-T 3.2-4-4/28/2004

Table 3.2-4 OG Real Estate Site Sample Listing, Hudson River PCBs Superfund Facility Siting

							CLP												Geotechnical Analyses					
							Organics	Inorganic											Non-CLP					
Media	Date	Sample Location	CLP Number	Matrix Code	Depth A	Type	TCL VOCs (OLM04.2)	TCL SVOCs (OLM04.2)	TCL Pesticides/PCBs (OLM04.2)	TAL Metals/Mercury (ILM04.1)	TAL Cyanide (ILM04.1)	% Solids (ASTM_D2216)	Chlorinated Herbicides (8151A)	Anions (9056)	TOC (Lloyd Kahn)	Hardness (130.2)	Hexane Extractable Material (907)	TCLP VOCs	TCLP SVOCs	TCLP Metals/Mercury	Particle Size (ASTM_D422-63)	Atterberg Limits (ASTM_D4318-00)	Moisture Content (ASTM_D2216-8)	Area of Interest
Geotechnical Boring	-	OG-GT01-SB	-	SO	-	N															X	X	X	Ash fill
	-	OG-GT02-SB	-	SO	-	N															X	X	X	Ash fill
Subsurface Soil	-	OG-GT03-SB	-	SO	-	N															X	X	X	Former island
IDW	TBD	OG-WA01	-	WA	-	N												X	X	X				General
	TBD	OG-WW01	-	WW	-	N												X	X	X				General

^A Depth in feet below ground surface unless otherwise specified.

Key:

CLP = Contract Laboratory Protocol
 /D = duplicate sample
 FD = field duplicate sample (Type)
 GP = Geoprobe boring location
 GT = geotechnical boring location
 GW = groundwater sample
 IDW = investigation-derived waste
 in = inch
 M = matrix spike/matrix spike duplicate (Type)

N = original sample (Type)
 OG = OG Real Estate Site
 PCB = polychlorinated biphenyl
 QA = quality assurance
 QC = quality control
 SB = subsurface soil
 SE = sediment sample
 SO = soil sample
 SS = surface soil

SVOCs = semivolatile organic compounds
 SW = surface water
 TBD = to be determined
 TCL = target compound list
 TCLP = toxicity characteristic leachate procedure
 TOC = total organic carbon
 VOCs = volatile organic compounds
 WA = IDW solid waste
 WW = IDW waste water

Key at the end of Table

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples
from the OG Real Estate Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	OG-SS01 10/7/2003 0 - 2 in	OG-SS02 10/7/2003 0 - 2 in	OG-SS03 10/7/2003 0 - 2 in	OG-SS04 10/7/2003 0 - 2 in
TCL Volatile Organic Compounds (µg/Kg)							
Ethylbenzene	5500	NA		--	--	--	--
Methyl Acetate	NA	NA		--	--	--	--
Toluene	1500	NA		--	--	--	--
TCL Semivolatile Organic Compounds (µg/Kg)							
2-Methylnaphthalene	36400	NA		440 U	520 U	490 U	580 UJ
Acenaphthene	50000	NA		440 U	520 U	490 U	580 UJ
Acenaphthylene	41000	NA		440 U	520 U	490 U	580 UJ
Anthracene	50000	NA		440 U	520 U	490 U	580 UJ
Benzo(a)anthracene	224 or MDL	NA		140 J	520 U	490 U	580 UJ
Benzo(a)pyrene	61 or MDL	NA		170 J	520 U	490 U	580 UJ
Benzo(b)fluoranthene	1100	NA		230 J	520 U	490 U	580 UJ
Benzo(g,h,i)perylene	50000	NA		110 J	520 U	490 U	580 UJ
Benzo(k)fluoranthene	1100	NA		160 J	520 U	490 U	580 UJ
Bis(2-ethylhexyl)phthalate	50000	NA		440 U	520 U	490 U	580 UJ
Carbazole	NA	NA		440 U	520 U	490 U	580 UJ
Chrysene	400	NA		210 J	520 U	490 U	580 UJ
Dibenzo(a,h)anthracene	14 or MDL	NA		440 U	520 U	490 U	580 UJ
Dibenzofuran	6200	NA		440 U	520 U	490 U	580 UJ
Fluoranthene	50000	NA		260 J	520 U	490 U	580 UJ
Fluorene	50000	NA		440 U	520 U	490 U	580 UJ
Indeno(1,2,3-cd)pyrene	3200	NA		170 J	520 U	490 U	580 UJ
Naphthalene	13000	NA		440 U	520 U	490 U	580 UJ
Phenanthrene	50000	NA		130 J	520 U	490 U	580 UJ
Pyrene	50000	NA		270 J	520 U	490 U	580 UJ
TCL Pesticide and PCBs (µg/Kg)							
4,4'-DDD	2900	NA		4.4 U	5.2 U	4.9 U	5.8 UJ
4,4'-DDE	2100	NA		9.1 J	5.2 U	4.9 U	5.8 UJ
4,4'-DDT	2100	NA		7.2	5.2 U	4.9 U	4.2 J
Aldrin	41	NA		2.3 U	2.7 U	2.5 U	1.7 J
beta-BHC	200	NA		2.3 U	7.1 JN	4.1 JN	3 UJ
Dieldrin	44	NA		4.4 U	5.2 U	4.9 U	3.5 J
Endosulfan I	900	NA		2.3 U	2.7 U	2.5 U	3 UJ
Endrin	100	NA		4.4 U	5.2 U	4.9 U	3.7 J
Heptachlor	100	NA		2.3 U	2.7 U	2.5 U	1.7 J
Herbicides (µg/Kg)							
2,4-D	500	NA		--	--	--	--
2,4-DB	NA	NA		--	--	--	--
Dichlorprop	NA	NA		--	--	--	--

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples
from the OG Real Estate Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	OG-SS01 10/7/2003 0 - 2 in	OG-SS02 10/7/2003 0 - 2 in	OG-SS03 10/7/2003 0 - 2 in	OG-SS04 10/7/2003 0 - 2 in
TAL Metals and Mercury (mg/Kg)							
Aluminum	SB	NA	8630	12400	14100	14000	
Antimony	SB	NA	1.9 U	2.2 U	2.2 U	2.5 U	
Arsenic	7.5 or SB	3-12 (NYS BG)	9.5 J	54	44.3 J	31.9 J	
Barium	300	15-600	256	428	496	430	
Beryllium	0.16 or SB	0-1.75	0.62 B	1.5 B	2	1.9	
Cadmium	1 or SB	0.1-1	0.26 B	0.16 U	0.15 U	0.18 U	
Calcium	SB	130-35000 (NYS BG)	57700	5790	7280	6970	
Chromium	10 or SB	1.5-40 (NYS BG)	10.6	21.9	21.7	22	
Cobalt	30 or SB	2.5-60 (NYS BG)	12.1 B	5.7 B	7.5 B	7.3 B	
Copper	25 or SB	1-50	35.9	21.6	20.8	32.6	
Iron	2000 or SB	2000-550000	20300	11300	23400	19200	
Lead	SB or 200 - 500	200-500	244	39.2	26.5	29.6	
Magnesium	SB	100-5000	6070	1190 B	1360 B	1950	
Manganese	NA	50-5000	4380 J	105 J	143	247	
Nickel	13 or SB	0.5-25	25	47	54	56.5	
Potassium	SB	8500-43000 (NYS BG)	588 B	710 B	923 B	993 B	
Selenium	2 or SB	0.1-3.9	1.3 J	3.2 J	1.5 J	0.69 BJ	
Silver	SB	NA	1.3 BJ	0.47 U	0.45 U	0.53 U	
Sodium	SB	6000-8000	142 U	246 B	344 B	428 B	
Thallium	SB	NA	1.1 UR	1.3 UR	1.5 B	1.5 U	
Vanadium	150 or SB	1-300	52.4	147	158	136	
Zinc	20 or SB	9-50	293	29.4	27	62.4	
Mercury	0.1	0.001-0.2	0.2 J	0.23 J	0.07 U	0.09 U	
Total Cyanide (mg/Kg)							
Cyanide	NA	NA	0.63	0.42	0.27	0.64	
Total Petroleum Hydrocarbons (mg/Kg)							
N-Hexane Extractable Material	NA	NA	--	--	--	--	

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples
from the OG Real Estate Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	OG-SS05 10/7/2003 0 - 2 in	OG-SS06 10/7/2003 0 - 2 in	OG-SS07 10/7/2003 0 - 2 in	OG-SS08 10/7/2003 0 - 2 in
TCL Volatile Organic Compounds (µg/Kg)							
Ethylbenzene	5500	NA		--	14 U	10 R	15 UJ
Methyl Acetate	NA	NA		--	14 U	10 U	4 J
Toluene	1500	NA		--	14 U	3 J	15 UJ
TCL Semivolatile Organic Compounds (µg/Kg)							
2-Methylnaphthalene	36400	NA		470 U	430 U	520 U	1800 J
Acenaphthene	50000	NA		470 U	430 U	520 U	1300 J
Acenaphthylene	41000	NA		470 U	430 U	300 J	12000
Anthracene	50000	NA		470 U	430 U	300 J	12000
Benzo(a)anthracene	224 or MDL	NA		110 J	430 U	730	51000
Benzo(a)pyrene	61 or MDL	NA		130 J	430 U	650	36000
Benzo(b)fluoranthene	1100	NA		96 J	430 U	740	59000
Benzo(g,h,i)perylene	50000	NA		470 U	430 UJ	520 UJ	14000
Benzo(k)fluoranthene	1100	NA		140 J	430 U	830	16000
Bis(2-ethylhexyl)phthalate	50000	NA		200 J	430 U	350 J	4600 U
Carbazole	NA	NA		470 UJ	430 UJ	520 UJ	3500 J
Chrysene	400	NA		140 J	430 U	860	56000
Dibenzo(a,h)anthracene	14 or MDL	NA		470 U	430 U	180 J	12000
Dibenzofuran	6200	NA		470 U	430 U	520 U	1800 J
Fluoranthene	50000	NA		180 J	430 U	1100	99000
Fluorene	50000	NA		470 U	430 U	520 U	1700 J
Indeno(1,2,3-cd)pyrene	3200	NA		470 U	430 UJ	450 J	28000
Naphthalene	13000	NA		470 U	430 U	520 U	1700 J
Phenanthrene	50000	NA		470 U	430 U	250 J	24000
Pyrene	50000	NA		190 J	430 U	1200	82000
TCL Pesticide and PCBs (µg/Kg)							
4,4'-DDD	2900	NA		4.7 U	4.3 U	5.2 U	23 J
4,4'-DDE	2100	NA		7.8	4.3 U	3.7 J	6.7 R
4,4'-DDT	2100	NA		9.9	4.3 U	2.7 J	40 J
Aldrin	41	NA		2.4 U	2.2 U	2.7 U	2.4 U
beta-BHC	200	NA		4.4 JN	2.4	5.3 J	2.4 U
Dieldrin	44	NA		4.7 U	4.3 U	5.2 U	4.6 U
Endosulfan I	900	NA		2.4 U	2.2 U	2.7 U	2.4 R
Endrin	100	NA		4.7 U	4.3 U	5.2 U	4.6 U
Heptachlor	100	NA		2.4 U	2.2 U	2.7 U	2.4 U
Herbicides (µg/Kg)							
2,4-D	500	NA		--	--	22.7 U	41.7
2,4-DB	NA	NA		--	--	43.6	118
Dichlorprop	NA	NA		--	--	22.7 U	21.4 J

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples
from the OG Real Estate Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	OG-SS05 10/7/2003 0 - 2 in	OG-SS06 10/7/2003 0 - 2 in	OG-SS07 10/7/2003 0 - 2 in	OG-SS08 10/7/2003 0 - 2 in
TAL Metals and Mercury (mg/Kg)							
Aluminum	SB	NA	7170	10400	11800	5880	
Antimony	SB	NA	2.1 U	1.9 U	3.1 B	36.3	
Arsenic	7.5 or SB	3-12 (NYS BG)	6.4 J	41.6 J	17.3 J	11.8 J	
Barium	300	15-600	64.6	378	259	97.5	
Beryllium	0.16 or SB	0-1.75	0.39 B	1.2 B	0.82 B	0.47 B	
Cadmium	1 or SB	0.1-1	0.15 U	0.13 U	0.16 U	0.13 U	
Calcium	SB	130-35000 (NYS BG)	6220	5200	6000	3850	
Chromium	10 or SB	1.5-40 (NYS BG)	19.5	44.7	17.2	20.9	
Cobalt	30 or SB	2.5-60 (NYS BG)	9.6 B	31.4	12.1 B	7 B	
Copper	25 or SB	1-50	30.7	39	38.9	6560	
Iron	2000 or SB	2000-550000	29400	35000	25500	20100	
Lead	SB or 200 - 500	200-500	79.5	19.3	60.1	753	
Magnesium	SB	100-5000	3530	5880	5790	2350	
Manganese	NA	50-5000	524	324	2200	244	
Nickel	13 or SB	0.5-25	69.3	2240	28.2	94.8	
Potassium	SB	8500-43000 (NYS BG)	882 B	750 B	1010 B	638 B	
Selenium	2 or SB	0.1-3.9	0.56 UJ	0.83 BJ	0.61 UJ	0.7 BJ	
Silver	SB	NA	0.44 U	0.4 U	0.48 U	0.4 U	
Sodium	SB	6000-8000	160 U	206 B	205 B	147 U	
Thallium	SB	NA	1.2 U	1.1 U	1.3 U	1.1 U	
Vanadium	150 or SB	1-300	296	9900	45	190	
Zinc	20 or SB	9-50	98.7	46.7	274	91	
Mercury	0.1	0.001-0.2	0.1 BJ	0.08 BJ	0.07 U	0.07 U	
Total Cyanide (mg/Kg)							
Cyanide	NA	NA	0.57	0.21	1.3	0.17 U	
Total Petroleum Hydrocarbons (mg/Kg)							
N-Hexane Extractable Material	NA	NA	--	--	261 U	888	

Table 3.3-1
Analytical Data Summary of Detected Analytes for Surface Soil Samples
from the OG Real Estate Site

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

(2) Eastern United States background values.

Key:

- B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
 - /D = Duplicate sample.
 - in = Inches.
 - J = The reported value is an estimated quantity.
 - JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
 - MDL = Method detection Limit
 - mg/Kg = Milligrams per kilogram.
 - NA = Not applicable/available.
 - NYS = New York State.
 - NYSDEC = New York State Department of Environmental Conservation.
 - OG = OG Real Estate Site.
 - PCB = Polychlorinated biphenyl.
 - R = The data is unusable.
 - SB = Site background.
 - SS = Surface soil sample.
 - TAL = Target Analyte List.
 - TCL = Target Compound List.
 - U = The analyte was analyzed for but not detected at the value reported.
 - UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
 - µg/Kg = Micrograms per kilogram.
 - = Sample was not analyzed for this parameter.
- 170 J** Shaded cells with bold exceed the NYSDEC screening value.

Table 3.3-2
Analytical Data Summary of Detected Analytes for Subsurface Soil Samples
from the OG Real Estate Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	OG-GP01-SB 10/7/2003 2.5 - 4 ft	OG-GP02-SB 10/7/2003 13.8 - 15.8 ft	OG-GP03-SB 10/7/2003 14 - 16 ft
TCL Volatile Organic Compounds (µg/Kg)						
2-Butanone	NA	NA		21 UJ	10 U	21
Acetone	200	NA		21 UJ	10 UJ	110 J
Carbon Disulfide	2700	NA		21 UJ	10 U	0.5 J
Cyclohexane	NA	NA		21 UJ	10 U	0.6 J
TCL Semivolatile Organic Compounds (µg/Kg)						
Anthracene	50000	NA		610 U	400 U	280 J
Benzo(a)anthracene	224 or MDL	NA		610 U	400 U	1400
Benzo(a)pyrene	61 or MDL	NA		610 U	400 U	1200
Benzo(b)fluoranthene	1100	NA		610 U	400 U	1100
Benzo(g,h,i)perylene	50000	NA		610 UJ	400 U	380 J
Benzo(k)fluoranthene	1100	NA		610 U	400 U	970
Bis(2-Ethylhexyl)Phthalate	50000	NA		160 J	400 U	420 U
Chrysene	400	NA		610 U	400 U	1400
Dibenzo(a,h)anthracene	14 or MDL	NA		610 U	400 U	240 J
Fluoranthene	50000	NA		610 U	400 U	2200
Indeno(1,2,3-cd)pyrene	3200	NA		610 U	400 U	700
Phenanthrene	50000	NA		610 U	400 U	480
Pyrene	50000	NA		610 U	400 U	2100

Table 3.3-2
Analytical Data Summary of Detected Analytes for Subsurface Soil Samples
from the OG Real Estate Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	OG-GP01-SB 10/7/2003 2.5 - 4 ft	OG-GP02-SB 10/7/2003 13.8 - 15.8 ft	OG-GP03-SB 10/7/2003 14 - 16 ft
TAL Metals and Mercury (mg/Kg)						
Aluminum	SB	NA		10400	5710	8890
Arsenic	7.5 or SB	3-12 (NYS BG)		55.4 J	1.5 BJ	4.4 J
Barium	300	15-600		388	25.9 B	76.4
Beryllium	0.16 or SB	0-1.75		1.8 B	0.26 B	0.51 B
Calcium	SB	130-35000 (NYS BG)		7890	2610	6320
Chromium	10 or SB	1.5-40 (NYS BG)		18.8	8.1	12.3
Cobalt	30 or SB	2.5-60 (NYS BG)		7.4 B	5.4 B	10.5 B
Copper	25 or SB	1-50		31.7	10.2	20.9
Iron	2000 or SB	2000-550000		18900	11400	21600
Lead	SB or 200 - 500	200-500		10.1	5.1	12.7
Magnesium	SB	100-5000		1480 B	3080	5630
Manganese	NA	50-5000		61.4	109	606
Nickel	13 or SB	0.5-25		16.5	13.6	21.9
Potassium	SB	8500-43000 (NYS BG)		729 B	636 B	674 B
Selenium	2 or SB	0.1-3.9		1.3 BJ	0.48 UJ	0.48 UJ
Sodium	SB	6000-8000		415 B	139 U	137 U
Vanadium	150 or SB	1-300		45.9	10.1 B	18.5
Zinc	20 or SB	9-50		29.9	45.4	66.9
Mercury	0.1	0.001-0.2		0.18 BJ	0.06 U	0.06 U
Total Cyanide (mg/Kg)						
Cyanide	NA	NA		0.33	0.16 U	0.15 U

Table 3.3-2
Analytical Data Summary of Detected Analytes for Subsurface Soil Samples
from the OG Real Estate Site

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

(2) Eastern United States background values.

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.

/D = Duplicate sample.

in = Inches.

J = The reported value is an estimated quantity.

JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.

MDL = Method detection Limit

mg/Kg = Milligrams per kilogram.

NA = Not applicable/available.

NYS = New York State.

NYSDEC = New York State Department of Environmental Conservation.

OG = OG Real Estate Site.

PCB = Polychlorinated biphenyl.

R = The data is unusable.

SB = Site background.

-SB = Subsurface soil sample.

TAL = Target Analyte List.

TCL = Target Compound List.

U = The analyte was analyzed for but not detected at the value reported.

UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.

µg/Kg = Micrograms per kilogram.

- = Sample was not analyzed for this parameter.

1400 Shaded cells with bold exceed the NYSDEC screening value.

Table 3.3-3
Analytical Data Summary of Detected Analytes for Surface Water Samples
from the OG Real Estate Site

		Sample ID:	OG-SW02	OG-SW03
		Date:	10/7/2003	10/7/2003
Analyte	NYSDEC CLASS D (1)			
TCL Volatile Organic Compounds (µg/L)				
Acetone	NA		4 J	3 J
Toluene	480 for A(A)		2 J	3 J
TCL Semivolatile Organic Compounds (µg/L)				
Bis(2-ethylhexyl)phthalate	NA		10 U	2 J
TAL Metals and Mercury (µg/L)				
Aluminum	NA		388	134 B
Barium	NA		50.2 B	19.9 B
Calcium	NA		99200	26700
Chromium	CV		1.3 B	1.1 U
Copper	CV		2.7 B	2.2 B
Iron	300 for A(A)		1680	363
Lead	CV		3.2	2.6 U
Magnesium	NA		19300	4980 B
Manganese	NA		424	40.6
Nickel	CV		3.6 B	3.7 B
Potassium	NA		4270 B	1330 B
Sodium	NA		189000 J	15000 J
Vanadium	190 for A(A)		1.6 U	1.6 B
Zinc	CV		26.9 J	25.4 J
Anions (mg/L)				
Chloride	NA		308	22.3
Fluoride	CV		0.125	0.066 J
Nitrate-N	NA		0.368	0.324
Sulfate	NA		30	12.1
Hardness (mg/L)				
Hardness (As CaCO ₃)	NA		465	165

Table 3.3-3
Analytical Data Summary of Detected Analytes for Surface Water Samples
at the OG Real Estate Site

(1) New York State Department of Environmental Conservation, Technical and Operational Guidance Series #1.1.1: Class D Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998.

Key:

A(A) = Standard/guidance value is for the protection of fish survival (fresh waters).

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.

CV = Value calculated based on hardness as per NYSDEC TOGS 1.1.1, 1998.

/D = Duplicate sample.

J = The reported value is an estimated quantity.

JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.

mg/L = Milligrams per liter.

NA = Not applicable/available.

NYSDEC = New York State Department of Environmental Conservation.

OG = OG Real Estate Site.

SW = Surface water sample.

TAL = Target Analyte List.

TCL = Target Compound List.

U = The analyte was analyzed for but not detected at the value reported.

UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.

µg/L = Micrograms per liter.

Table 3.3-4
Analytical Data Summary of Detected Analytes for Sediment Samples
from the OG Real Estate Site

NYSDEC Screening Criteria (1), (2)			Sample ID: OG-SE01	OG-SE02	OG-SE03	OG-SE04
Analyte			Date: 10/07/03	10/07/03	10/07/03	10/07/03
TCL Volatile Organic Compounds (µg/Kg)						
Acetone	NA		36 J	19 UJ	4 J	10 UJ
Methyl Acetate	NA		7 J	6 J	11 U	10 U
Toluene	CV		24 UJ	2 J	11 UJ	0.7 J
TCL Semivolatile Organic Compounds (µg/Kg)						
Benzo(a)anthracene	CV		580 U	270 J	120 J	180 J
Benzo(a)pyrene	NA		580 U	370 J	150 J	160 J
Benzo(b)fluoranthene	NA		580 U	500 J	150 J	190 J
Benzo(k)fluoranthene	NA		580 U	380 J	190 J	200 J
Bis(2-ethylhexyl)phthalate	CV		2500	200 J	120 J	390 U
Chrysene	NA		580 U	470 J	180 J	220 J
Di-n-octylphthalate	NA		580 U	560 U	500 U	87 J
Fluoranthene	CV		580 U	770	300 J	400
Indeno(1,2,3-cd)pyrene	NA		580 UJ	280 J	100 J	120 J
Phenanthrene	CV		580 U	290 J	120 J	180 J
Pyrene	CV		580 U	610	260 J	370 J
TCL Pesticide and PCBs (µg/Kg)						
4,4'-DDD	NA		5.8 U	7.3 JN	2.8 J	3.9 U
4,4'-DDE	NA		5.8 U	11 J	5	1.9 J
4,4'-DDT	CV		5.8 U	5.6 U	5 U	0.95 J
beta-BHC	CV		3 U	2.9 U	2.1 J	2 U
	NYSDEC Screening Criteria (1) Lowest effect (2) Severe effect (2)		Sample ID: OG-SE01	OG-SE02	OG-SE03	OG-SE04
Analyte			Date: 10/07/03	10/07/03	10/07/03	10/07/03
TAL Metals and Mercury (mg/Kg)						
Aluminum	NA	NA	9600	7360	5100	7630
Arsenic	6.0	33	25.8	7.8 J	7.9 J	12.8
Barium	NA	NA	263	74.7 B	51.6 B	99.5
Beryllium	NA	NA	1.1 B	0.48 B	0.32 B	0.42 B
Calcium	NA	NA	9350	10100	5990	9980
Chromium	26	110	23.9	9.7	6.1	12.6
Cobalt	NA	NA	11.5 B	8.9 B	6.3 B	8.3 B
Copper	16	110	33.4	22.9	11.9	29.2
Iron	20000	40000	12100	17900	13900	22300
Lead	31	110	27.1	22	12.6	96.9
Magnesium	NA	NA	2210	3840	2480	3920
Manganese	460	1100	221 J	1040 J	519 J	445 J
Nickel	16	50	408	18	12.3	179
Potassium	NA	NA	1040 B	720 B	574 B	891 B
Selenium	NA	NA	3.1 J	1.7 BJ	0.57 UJ	0.59 BJ
Silver	1	2.2	0.53 U	1.1 BJ	1.2 BJ	0.35 U
Sodium	NA	NA	341 B	277 B	164 U	129 U
Vanadium	NA	NA	698	18.2 B	13.9 B	934
Zinc	120	270	58.1	86.3	46.5	99.1
Mercury	0.15	1.3	0.1 BJ	0.1 BJ	0.07 U	0.43
Total Cyanide (mg/Kg)						
Cyanide	NA	NA	0.38	0.23 U	0.21 U	0.25
Total Organic Carbon (mg/Kg)						
Total Organic Carbon	NA	NA	220000	21000	7400	48000
Percent Solids (%)						
Percent Solids	NA	NA	59	52	56	83

Table 3.3-4
Analytical Data Summary of Detected Analytes for Sediment Samples
from the OG Real Estate Site

(1) New York State Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments, 1999. The benthic aquatic life chronic toxicity protection level was used.

(2) As per the 1999 NYSDEC Guidance, the screening criteria for organic contaminants in sediments are calculated based on sample Total Organic Carbon concentration. However, two levels of risk are established for metals contamination in sediments (Lowest Effect Level and Severe Effect Level).

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.

CV = Value calculated based on total organic carbon as per NYSDEC Guidance.

J = The reported value is an estimated quantity.

JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.

mg/Kg = Milligrams per kilogram.

NA = Not applicable/available.

NYSDEC = New York State Department of Environmental Conservation.

OG = OG Real Estate Site.

PCB = Polychlorinated biphenyl.

R = The data is unusable.

SE = Sediment sample.

TAL = Target Analyte List.

TCL = Target Compound List.

U = The analyte was analyzed for but not detected at the value reported.

UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.

µg/Kg = Micrograms per kilogram.

% = Percent.

120 J Shaded cells with bold exceed the NYSDEC guidance value (except for metals).

Table 3.3-5

Analytical Data Summary of Detected Analytes for Groundwater Samples from Temporary Wells
at the OG Real Estate Site

Analyte	NYSDEC CLASS GA (1)	Sample ID:	OG-GP01-GW	OG-GP02-GW	OG-GP03-GW
		Date:	10/15/2003	10/15/2003	10/15/2003
		EPA MCLs			
TAL Metals and Mercury (µg/L)					
Arsenic	25	10	227	5.8 U	5.8 U
Barium	1000	2000	420	179 B	259
Beryllium	3 (g)	4	0.1 U	0.1 U	0.12 B
Calcium	NA	NA	157000	225000	474000
Cobalt	NA	NA	1.3 U	1.3 U	2.4 B
Iron	300 (3)	300 (s)	11100	6150	41200
Magnesium	35000 (g)	NA	15300	48900	88300
Manganese	300 (3)	50 (s)	379	6130	18700
Potassium	NA	NA	4190 B	4630 B	3090 B
Selenium	10	50	3.8 U	4.1 BJ	5.8 J
Sodium	20000	NA	124000 J	24900 J	22300 J
Vanadium	NA	NA	2.2 B	0.9 U	0.9 U
Zinc	2000 (g)	5000 (s)	21.9	15.5 B	12.4 B

Table 3.3-5
Analytical Data Summary of Detected Analytes for Groundwater Samples from Temporary Wells
at the OG Real Estate Site

(1) New York State Department of Environmental Conservation, Technical and Operational Guidance Series #1.1.1: Class GA Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998.

(2) EPA National Primary and Secondary Drinking Water Standards, 2002.

(3) Screening value is for sum of Iron and Manganese is 500 µg/L.

(g) Guidance value used.

(s) Secondary standard used.

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.

/D = Duplicate sample.

EPA = Environmental Protection Agency.

GP = Boring.

GW = Groundwater sample.

J = The reported value is an estimated quantity.

MCL = Maximum Contaminant Level.

NA = Not applicable/available.

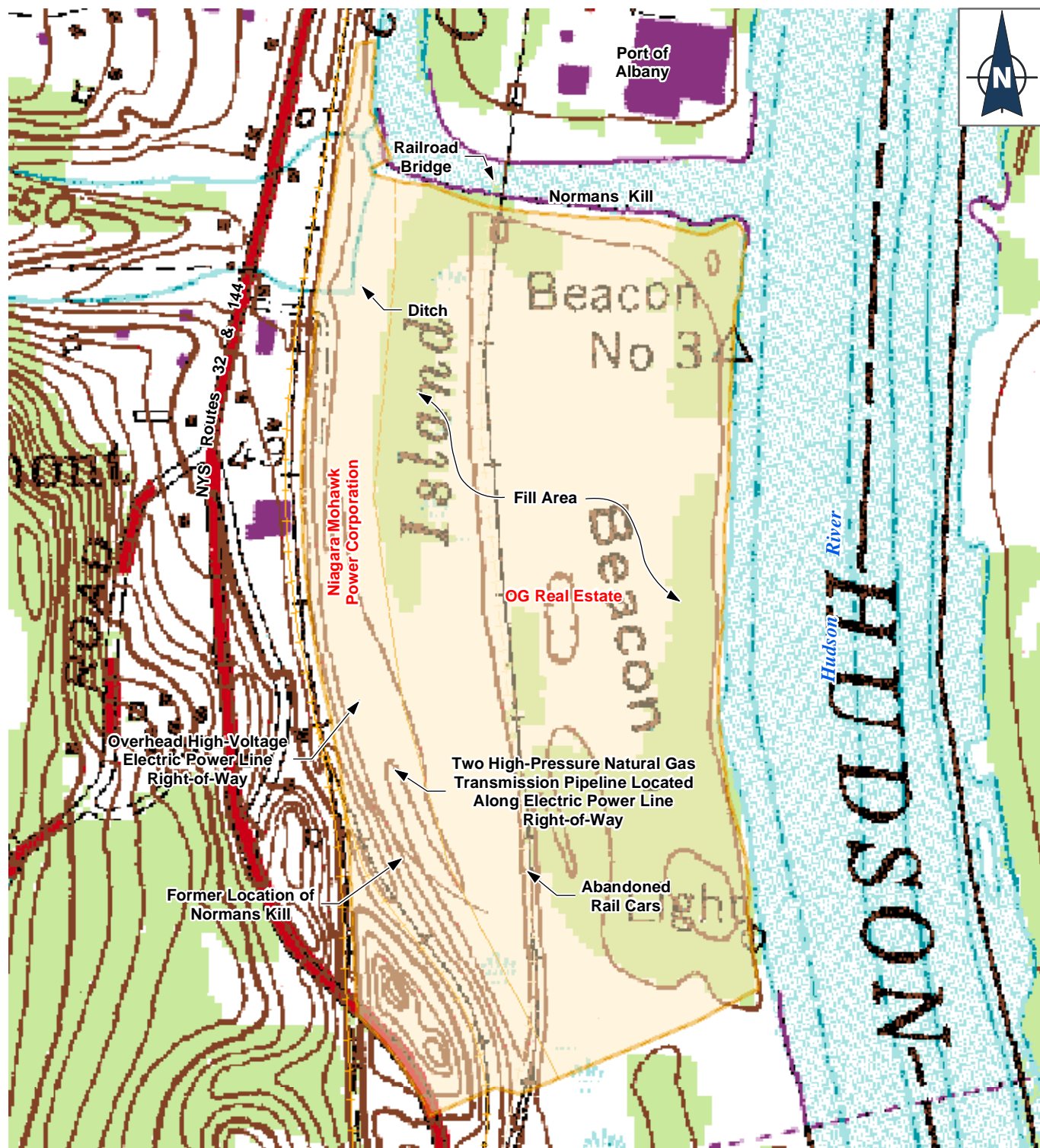
NYSDEC = New York State Department of Environmental Conservation.

OG = OG Real Estate Site.

TAL = Target Analyte List.

U = The analyte was analyzed for but not detected at the value reported.

µg/L = Micrograms per liter.



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad
- Abandoned Railroad

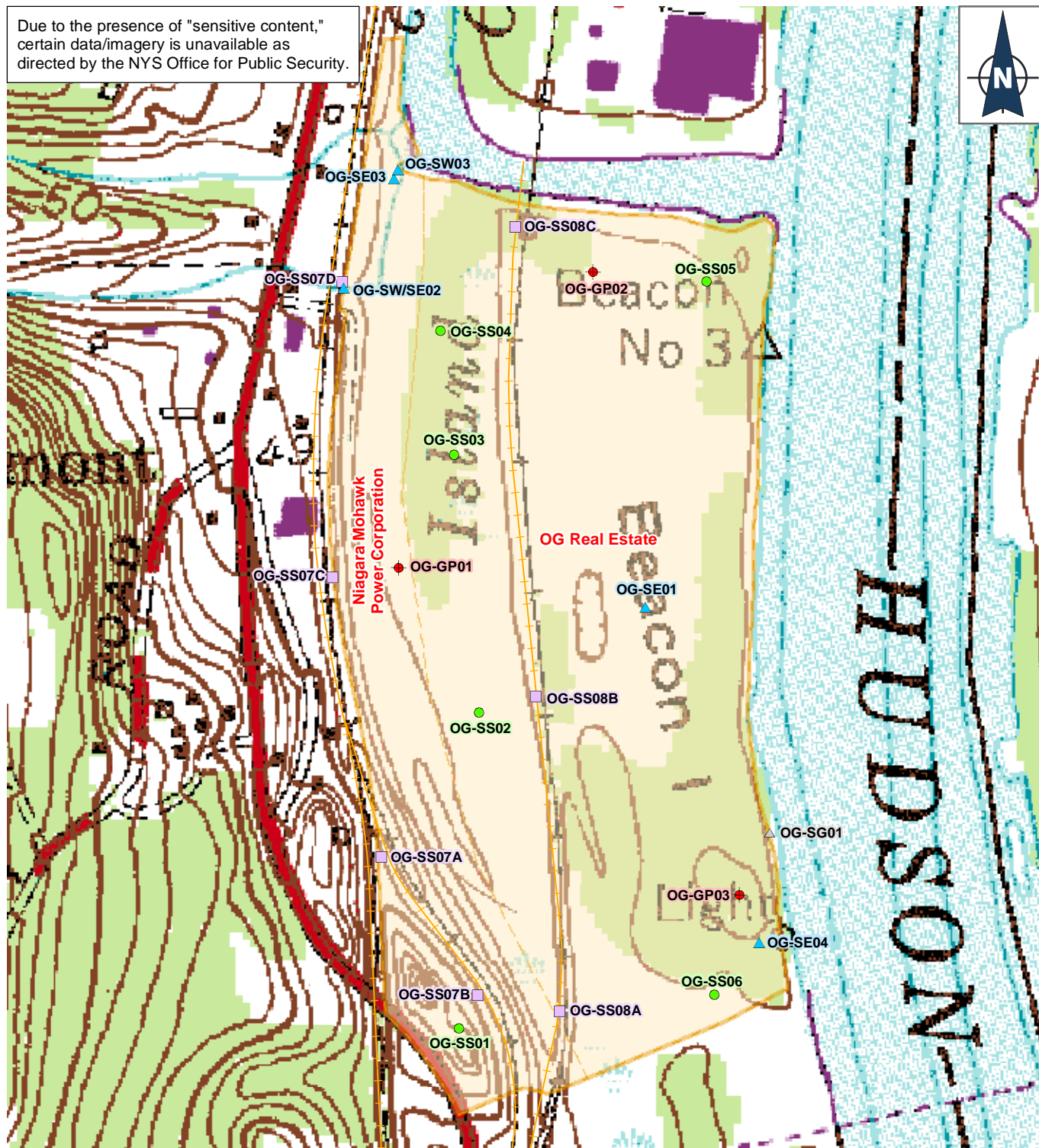
Hudson River
PCBs SUPERFUND SITE

Figure 2-1
Key Site Features
OG Real Estate

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.



Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.



LEGEND

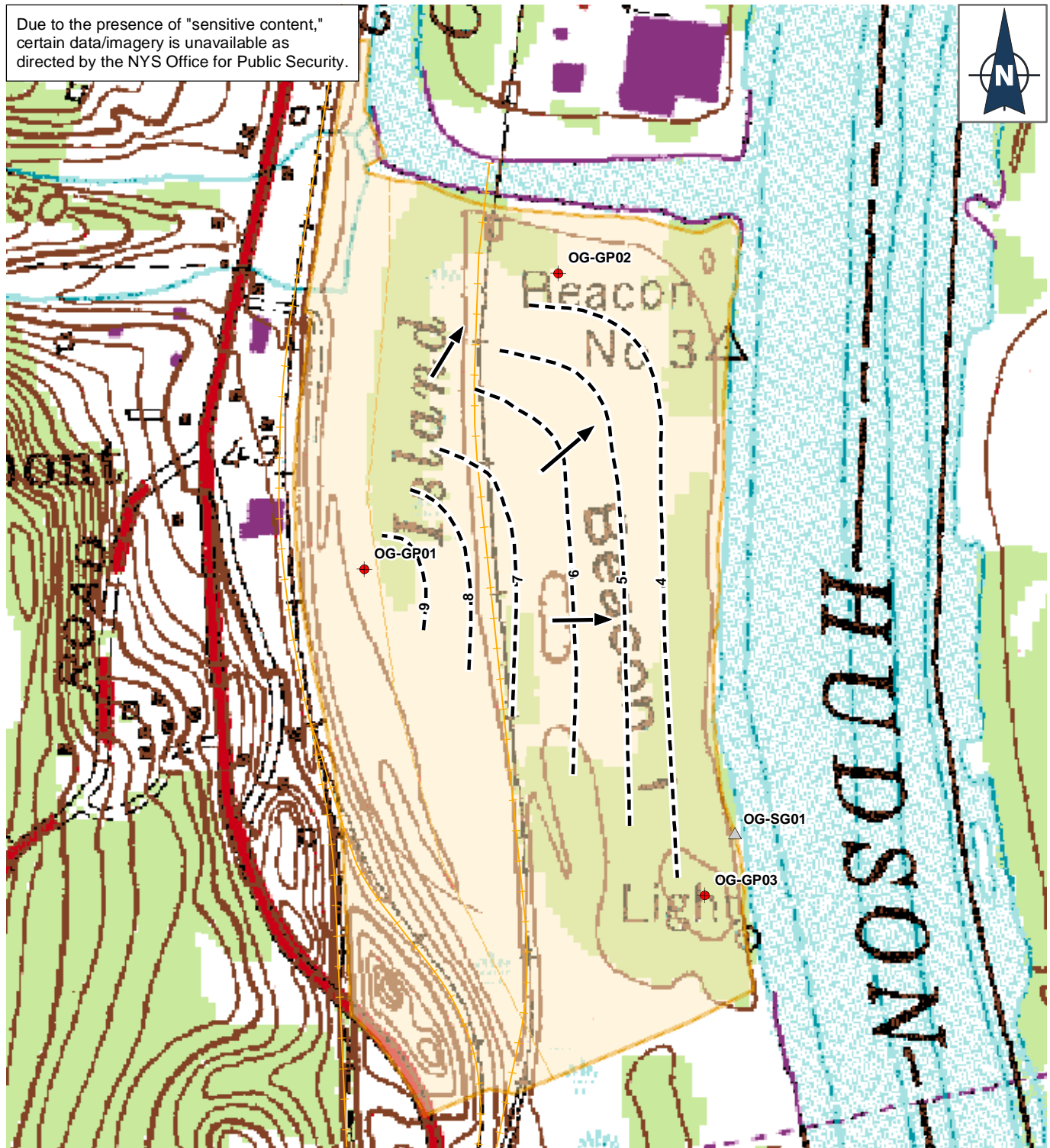
- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

Hudson River
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Figure 3-1
Sample Locations
OG Real Estate



Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.



LEGEND

- Groundwater Contour
- Temporary Well
- ▲ Stream Gauge
- Railroad
- ▭ Potential Site Boundary
- Direction of Groundwater Flow

(Note: The Hudson River is tidally influenced at this location, therefore groundwater flow direction may fluctuate near the shoreline.)

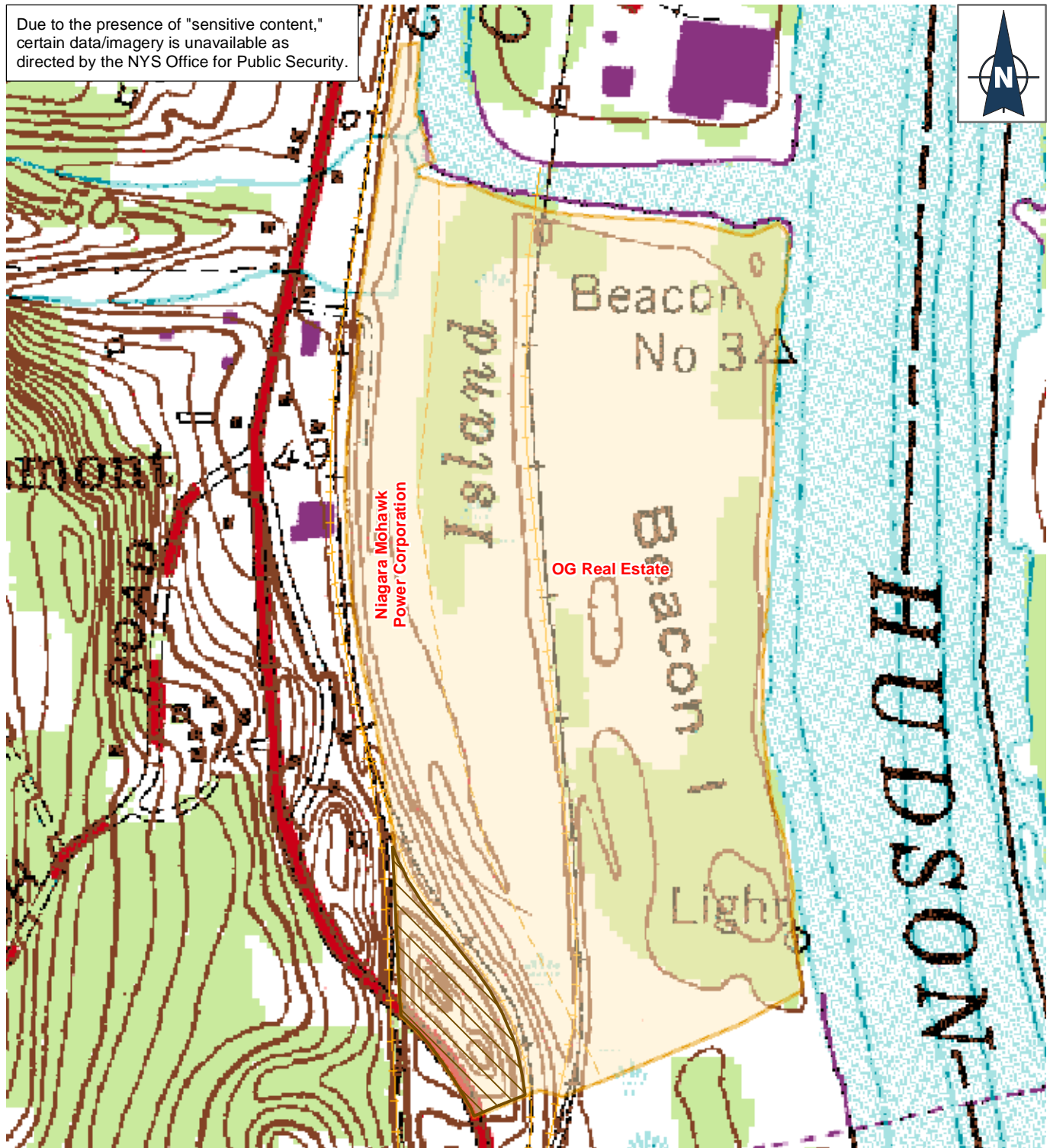
Water Level Elevations Measured on 11/6/2003
1 ft. Contour Interval

Hudson River
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Figure 3-2
Overburden Groundwater Contour Map
OG Real Estate



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LEGEND

Ⓣ Backhoe Trench Locations

Archaeological Testing Method

ⓧ Backhoe Test

ⓧ Shovel Test

ⓧ Backhoe & Shovel Test

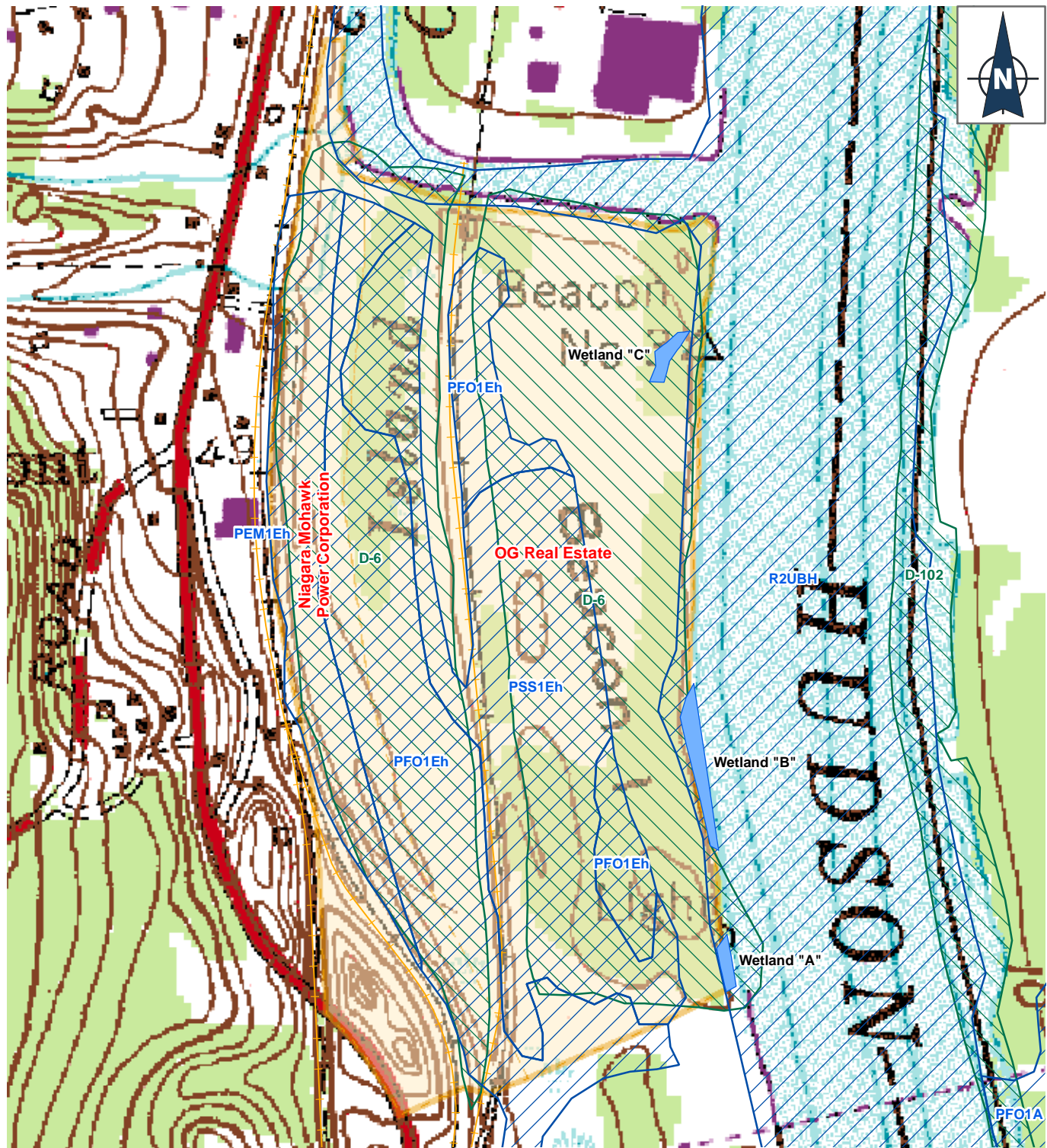
ⓧ Potential Site Boundary

¹ Most of This Site Was Previously Surveyed By Dr. Edward Curtin

Hudson River
PCBs SUPERFUND SITE

Figure 6-1
Field Sampling Areas¹
Phase I B Cultural Resources Investigation
OG Real Estate





LEGEND

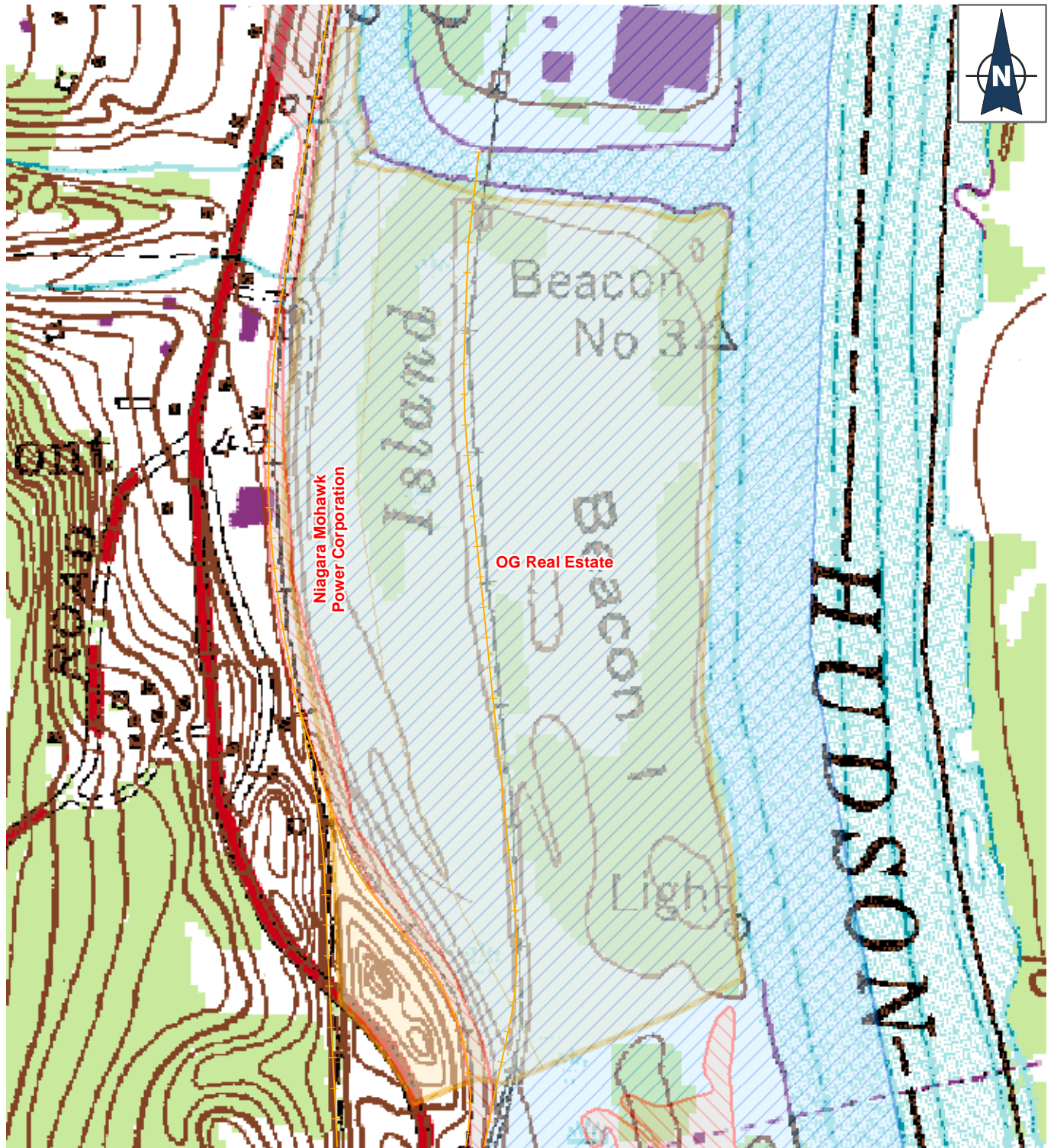
- NYS DEC Wetlands
- US Fish and Wildlife Wetlands
- Previous Wetland Delineation

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.





Hudson River
PCBs SUPERFUND SITE

Figure 7-1
Wetland Locations
OG Real Estate





LEGEND

-  Potential Site Boundary
-  Tax Parcels
- FEMA Floodplain**
 -  100 Year Floodplain
 -  500 Year Floodplain

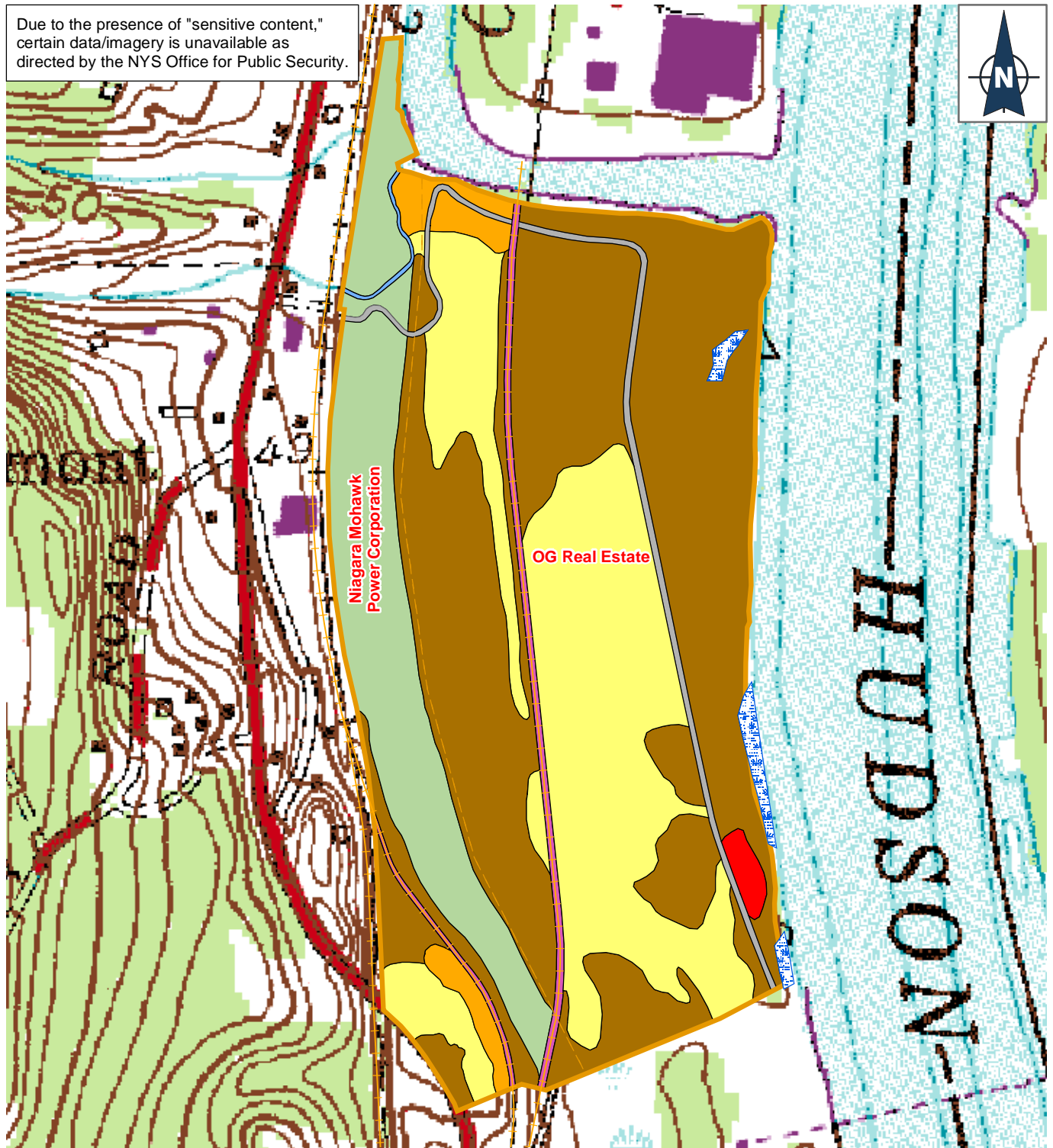
Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

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Figure 8-1
FEMA Floodplain Mapping
OG Real Estate



Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.



Ecological Communities

- Unpaved Road
- Wetland
- Successional Northern Hardwoods
- Successional Old Field / Mowed Pathway
- Successional Shrubland
- Successional Old Field
- Marsh Headwater Stream
- Railroad
- Landfill / Dump

Hudson River
PCBs SUPERFUND SITE

Figure 10-1
Site Ecological Communities
OG Real Estate

